COSMOS SCIENCE FICTION AND FANTASY MAGAZINE

NO. 1 ANC
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THE CURSE
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NO. 1 COSMOS SCIENCE FICTION AND FANTASY MAGAZINE

11-16-83

COSMOS SCIENCE FICTION AND FANTASY

Vol. 1, No. 1 **SEPT. 1953**

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COSMOS SCIENCE FICTION AND FANTASY is published bi-monthly by Star Publications, Inc., 545 Fifth Avenue, New York 17, N. Y. Application for entry as second-class matter is pending at the Post Office in New York, N. Y. 35¢ per copy. Subscriptions: (12 copies) $3.50 per year in the United States, its possessions, and Canada; elsewhere, $4.50.

Printed in the U. S. A.

THE TROUBLEMAKERS

The Ship needed the iron hand of Officer control. But two men fought for that control: an idealist and a ruthless demagogue. . .

By POUL ANDERSON

A bright dream, and an old one—the same dream which had lived in Pythias, Columbus, Ley, in hundreds and thousands of men and in man himself, and which now looked up to the stars.

Earth was subdued; the planets had been reached and found wanting; if the dream were not to die, the stars must come next. It was known that most of them must have planets, that the worlds which could hold man were numbered in the millions—but the nearest of them was more than a lifetime away. Man could not wait for the hypothetical faster-than-light drive, which might never be found—nothing in physics indicated such a possibility, and if the vision of the frontier, which had become a cultural basic transcending questions of merely material usefulness, were not to wither and die, a start of some kind must be made.

The Pioneer *first of her class,*

was launched in 2126. *A hundred and twenty-three years to Alpha Centauri—five or six generations, more than a long lifetime—but the dream would not be denied . . .*

—Enrico Yamatsu, *Starward!* v. III.

"HAVE you anything to say before your sentence is passed?"

Evan Friday looked around him, slowly, focusing on all the details which he might never see again. Guilty! After all his hopes, after the wrangling and the waiting and the throttled futile anger, guilty. It hadn't even taken them long to decide; they'd debated perhaps half an hour before coming out with the verdict.

Guilty.

Behind him, the spectators had grown silent. There weren't many of them here in person, though he knew that half the ship must be watching him through the telescreens. Mostly they were officer class, sitting stiff and uniformed in their chairs, regarding him out of carefully blanked faces. The benches reserved for crewfolk were almost empty—less color in the garments, more life in the expression, but a life that despised him and seemed to feel only a suppressed glee that one more officer had gotten what was coming to him.

There were five sitting before him, judge and jury in full uniform. Above them, the arching wall displayed a mural, a symbolic figure of Justice crowned with a wreath of stars. The woman-image was stately, but he thought with bitterness that the artist had gotten in a hint of sluttishness. Appropriate.

His eyes went back to the five who were the Captain's Court. They were the rulers of the ship as well, the leaders and representatives of the major factions aboard. Three were officers pure and simple, with the bone-bred hauteur of their class— Astrogation, Administration, and Engineering. The fourth was Wilson, speaking for the crew, a big coarse man with the beefy hands of a laborer. He was getting fat, after five years of politics.

Captain Gomez was in the center. He was tall and lean, with a fine halo of white hair fringing his gaunt unmoving face. You couldn't know what he was thinking; the loneliness of his post had reached into him during his forty-three years as master. A figurehead now, but impressive, and—

Friday licked his lips and drew himself up straighter. He was twenty-four years old, and

had been schooled in the rigid manners of the Astro officer's caste throughout all that time. Those habits held him up now. He was surprised at the steadiness of his tones:

"Yes, sir, I would like to say a few words.

"In the first place, I am not guilty. I have never so much as thought of bribery, sedition, or mutiny. There is nothing in my past record which would indicate anything of the sort. The evidence on which I have been convicted is the flimsiest tissue of fabrications, and several witnesses have committed perjury. I am surprised that this court even bothered to try me, to say nothing of finding me guilty, and can only suppose that it is a frameup to cover someone else. However, there is little I can do about that now. My friends will continue to work for a reversal of this decision, and meanwhile I must accept it.

"Secondly, I would like to say that the fact of my being falsely accused is not strange. It is a part of the whole incredible pattern of mismanagement, selfishness, treachery, and venality which has perverted the great idea of this voyage. The *Pioneer* was to reach the stars. She carried all the hopes of Earth, ten years of labor and planning, an incredible money investment, and a mission of supreme importance. Eighty years later, what do we have? An unending succession of tyrannies, revolutions, tensions, hatreds, corruptions—all the social evils which Earth so painfully overcame, reborn between the stars. The goal has been forgotten in a ceaseless struggle for power which is used only to oppress. I have said this much before, in private. Presumably some right of free speech still exists, for I was not arrested on such charges. Therefore, I repeat it in public. Gentlemen and crew, I ask you to think what this will lead to. I ask you in what condition we will reach Centauri, if we do so at all. I ask you to consider who is responsible. I know it will prejudice my personal cause, but I make a solemn charge of my own: that two successive Captains have failed to exercise due authority, that the Captaincy has become a farce and a figurehead, that the officers have become a tyrant caste and the crew an ignorant mob. I tell the whole ship that something will have to be done, and soon, if the expedition is not to be a failure and a death trap.

"If this is sedition and mutiny, so be it."

He finished formally: "Thank you, gentlemen." The blood was hot in his face, he knew he was flushing and was angry with

himself for it, he knew that he was shivering a little, and he knew that his words had been meaningless gibberish to the five men.

But the crew, and the better officers—?

Gomez cleared his throat, and spoke dryly: "I am sure idealism is creditable, especially in so young a man—provided that it is not a cover for something else, and that it is properly expressed. But there is also a tradition that junior officers should be seen and not heard, and that they are hardly prepared to govern a ship and seven thousand human beings. The court will remember your breach of discipline, Mr. Friday, in reviewing your case."

He leaned forward. "You have been found guilty of crimes which are punishable by death or imprisonment. However, in view of the defendant's youth and his previous good record, the court is disposed to leniency. Sentence is therefore passed that you shall be stripped of all title, honor, and privilege due to your rank, that your personal property shall be sequestered, and that you shall be reduced to a common crewman with assignment to the Engineering Section.

"Court dismissed."

The judges rose and filed out. Friday shook his head, trying to clear it of a buzzing faintness, trying to ignore the eyes and the voices at his back. A police sergeant fell in on either side of him. He thrust away the arm which one extended, and walked out between them.

THE gray coverall felt stiff and scratchy against his skin. They had given him two changes of clothing and a couple of dollars to last till payday, and that was all which remained to him now. He went centerward between the policemen, hardly noticing the walls and doors, shafts and faces.

The cops weren't bad fellows. They had looked the other way while he said good-bye to his parents. His mother had cried but his father, drilled into the reserve expected of an officer, had only been able to wring his hand and mutter awkwardly: "You shouldn't have spoken that way, Evan. It didn't help matters. But we'll keep working for you, and—and—good luck, my son." With a sudden flaring of the old iron pride: "Whatever happens, and whatever they say, remember you are still an officer of Astrogation!"

That had hurt perhaps most of all, and at the same time it had held more comfort than anything else. An officer, an officer, an officer—before God, still an officer of Astro!

It embarrassed the policemen. He was their inferior now, a plain crewman to be kicked around and kept in order, but he was of the Friday blood and he kept the manners they were trained to salute. They didn't know how to act.

One of them finally said, slowly and clumsily: "Look, you're in for some trouble, I'm afraid. Can you fight?"

"I was taught self-defense, yes," said Friday. Fitness was part of the code in all of Astro—which, after all, was composed exclusively of officers—as it was of only the upper ranks in Engineering and hardly at all in Administration. It belonged to the pattern; Astro was the smallest faction aboard, but it was the aristocracy of the aristocracy and at present it held the balance of power. "Why do you ask?"

"You'll have quite a few slugfests. Crewmen don't like officers, and when one gets kicked downstairs to them they take it out on him."

"But—I never hurt anybody. Damn it, I've been their friend!"

"Can't expect 'em all to see it that way. But stand up to 'em, be free and friendly—forget that manner of yours, remember you're one of them now—and it'll come out all right."

"You mean you police permit brawling?"

"Not too much we can do about it, as long as riots don't start. You can file a complaint with us if somebody beats you up, but I wouldn't advise it. They'd never take you in then. Somebody might murder you."

"I won't come crawling to anybody," said Friday with the stiffness of outrage. Underneath it was a horrible tightening in his throat.

"That's what I said; you've got to quit talking that way. Crewmen aren't a bad sort, but you can't live with 'em if you keep putting on airs. Just keep your mouth shut for awhile, till they get used to you."

The three men went down unending corridors, shafts, and companionways. Gravity lightened as they approached the axis of the ship. From the numbers on doors, Friday judged that they were bound for Engineering Barracks Three, which lay aft of the main gyros and about halfway between axis and top deck, but pride wouldn't allow him to ask if he was right.

They were well out of officer territory now. The halls were still clean, but somehow drabber and dingier; residential apartments were smaller and poorly furnished; shops, taverns, theaters and other public accommo-

dations blinked neon signs at the opposite wall, fifteen feet away; the clangor of metalworking dinned faintly in the background. Crewfolk swarmed here and there, drab-clad for work or gaudy for pleasure, men and women and a horde of children. Most of the men wore close haircuts and short beards, in contrast to the clean-shaven officers, and they were noisy and pushing and not too clean. Many of them looked after the policemen and cursed or spat. Friday felt unease crawling along his spine.

"Here we are."

He stopped, and looked ahead of him with a certain panicky blurring in his eyes. The doorway, entrance to one of the barracks for unmarried workers, was like a cave. The other doors on that side of the corridor, as far as he could see, opened into the same racketing darkness; the opposite wall was mostly blank, with side halls and companionways widely spaced. Two or three men, shooting dice some way down the corridor, were looking up and he saw their faces harden.

"We could go in with you," said one of the police apologetically, "but it'll be better for you if we don't. Good luck—Mr. Friday."

"Thank you," he said. His voice was husky.

He stood for a moment looking at the door. The crapshooters got up and started slowly toward him. He wondered if he should bolt in, decided against it, and managed a stiff nod as the strangers came up.

"How do you do?"

"What's the trouble, jo?" The speaker was big and blocky and red-haired. "Been boozin'?"

"Nah." Another man narrowed his eyes. "This's that guy Friday. The one they broke today. They sent 'im down here."

"Here? Friday? Well, I'll be scuttered!" The first crewman bowed elaborately. "Howdedo, Mister Ensign Friday, howdedo an' welcome to our humble *ay*-bode."

"Mebbe we sh'd roll out a rug, huh?"

"How'd y' like y'r eggs done, sir, sunny side up 'r turned?"

"Please," said Friday, "I would like to find my bunk." He recognized the condescending coldness in his voice too late.

"He'd like to find his bunk!" Someone grinned nastily. "Shall we show 'im, boys?"

Friday pushed himself free and went into the barracks.

It was gloomy inside, for a moment he was almost blind. Ventilators could not remove the haze of smoke and human sweat. Bunks lined the walls in two tiers, stretching enormously into a farther twilight. Pictures,

mostly of nude women, were pasted on the walls, and the walls, and the floor, while not especially dirty or littered, was a mess of shoes, clothes, tables, and chairs. Most of the light came from a giant-size telescreen, filling one wall with its images —the mindless, tasteless sort of program intended for this class —and the air with its noise. Perhaps a hundred men off duty were in the room, sleeping, lounging, gambling, watching the show, most of them wearing little but shorts.

Friday had been "crewquartering" before with companions of his age and class, but he'd stuck to the bars and similar places; his knowledge of this aspect had been purely nominal. It was a sudden feeling of being caged, a retching claustrophobia, which brought him around to face the others. They had followed him in, and stood blocking the doorway.

"Hey, boys!" The shout rang and boomed through the hollow immensity of the room, skittered past the raucousness of the telescreen and shivered faintly in the metal walls. "Hey, look who we got! Come over here and meet Mister Friday!"

Eyes, two hundred eyes glittering out of smoke and dark, and nowhere to go, nowhere to go. *They're going to beat me up. They're going to slug me, and I can't get away from it, I'll have to take it.*

He raised his voice above the savage jeering as they pressed in: "Why do you think I was sent down here? Why did they want to get rid of me, up above? Because I wanted you people to have some rights. I never hurt a crewman yet. Damn it, I couldn't have, I was always working with other officers."

"Here's your chance," grunted somebody. "I'll take him."

They squabbled for awhile over the privilege, while two men held Friday's arms. The big redhead who had first accosted him won.

"Let him go, boys," he said. "Give him a chance to in-trojuice himself proper like. I'm Sam Carter, Mr. Friday." His teeth flashed white in the smoky dusk. "And I'm very pleased to meet you."

"Chawmed, I am shu-ah," cried a voice, anonymous in the roiling twilight.

Friday had learned the techniques of boxing, wrestling, and infighting in all gravities from zero to Earth. He had enjoyed it, and been considered better than average. But Carter outmassed him thirty pounds, and officers didn't fight to hurt.

After awhile Friday lost fear, forgot pain, and wanted noth-

ing in all the world but to smash that red grinning face into ruin. Up and down, in and out, around and around, slug, duck, guard, slug, jar, and the mob hooting and howling out of the shadows. Hit him, right cross to the jaw, left to the belly, *oof!*

It took Sam Carter a long time to knock him down for good, and the crewman was hardly able to stand, himself, when it was done. There wasn't much cheering. A couple of men hauled Friday to a vacant bunk, and went back to whatever they had been doing before he came.

SLOWLY, Friday adjusted.

At first it was not quite real, it was a horror which could not have happened to him. He, Ensign Evan Friday, rising in Astro, minor social lion, all the ship before him—he, who meant to do something about correcting injustice when he had the power, but who knew he could wait and savor his own life, he just wasn't the sort of person who was accused and condemned and degraded. Those things happened to others, actually guilty in the struggle for control, or to the heroes of books from the Earth he had never seen—they didn't happen to *him!*

He came out of that daze into grinding nightmare. It took him days to recover from the beating he had had, and before he was quite well somebody else took him on, somebody whom he managed to defeat this time but who left him aching and hurt. Nevertheless, he was sent to work two watches after his arrival, and to the clumsiness of the recruit and the screaming of unaccustomed muscles his injuries were added.

Being ignorant of all shopwork, he was set to unskilled, heavy labor, jumping at everyone's shout with boxes, machine parts, tools, metal beams. Low gravity helped somewhat, but not enough—they simply assumed he could lift that much more mass, without regard to its inertia. His bewildered awkwardness drew curses and pay dockings. The racket of the shops seemed to din in his head every time he tried to sleep, and he could never get all the grime out of his skin and clothes.

Without friends, money, or a decent suit, he stayed in the barracks when the others went out to drink, wench or see a show. But somebody was always around with him, and the telescreen was never turned off. He thought he would go crazy before he learned how to ignore it, but he knew better than to protest.

The men stopped bullying

him after awhile, since he was disconcertingly handy with his fists, but it took weeks before the practical jokes ended. Short-sheeting and tying water-soaked knots in clothing were all right; he'd done that to others when he was younger; but hiding his shoes, pouring water in his bed and paint in his hair, slipping physics into his food—childish, but a vicious sort of childishness that made him wonder why he had ever felt sorry for this class.

He used the public facilities, bed and board and bath, since he could not afford the private home which theoretically was his to rent. He joined the union, since no one ever failed to, though it galled him to pay money into Wilson's war chest—Wilson, the parvenu, who wanted to run the officers that ran the ship! But otherwise he refused to conform, though it would have made things easier. He shaved, and kept his hair long, and fought to retain precision and restraint in his speech. He talked as little as possible to anyone, and spent most of his free time lying on his bunk thinking.

The loneliness was great. Sometimes, when he thought of his friends, when he remembered his quiet book-lined room, he wanted to cry. It was a closed world now. Crewmen simply didn't go into officer territory except on business.

Well, they might get him cleared. Meanwhile, the best thing he could do was to improve his position.

He worked with machines now and then, and was a little surprised to discover he had a fair amount of innate ability. Books from the crew branch of the ship's library taught him more, and presently he applied for promotion to machinist's assistant. By now he was tolerated, though still disliked, and made a good enough showing on test to get the job. It meant a raise, better working conditions, and one step further. The next was to be a machinist himself, one of the all-around men who were troubleshooters and extempore inventors—that was one grade higher than foreman, a job he could bypass.

Before God, he thought, *I'll get back to officer if I have to work my way!*

Theoretically, it was possible. But in practice there were only so many commissions to go around, and if you didn't belong to the right families you didn't get them.

He grew friendly with his immediate boss, a pleasant, older man who was not at all averse to letting him do most of the work and learn thereby. Grad-

ually, he got onto drinking terms with a few others. They weren't bad fellows, not entirely the sadistic savages he had imagined. They laughed more than the upper classes, and they often went to school in their spare time, or saved money to start a small business, in spite of the disadvantages under which tradesmen labored.

For that matter, crew conditions weren't the slummish horror which sentimentalists had pictured. Folk were poor, but they had the basic necessities and a few of the comforts. Violence was not uncommon, but it was simply one facet of a life which, on the whole, was fairly secure. Indeed, perhaps its worst feature was dullness.

Still, if another of the minor wars which had torn the ship before broke out— Something was wrong. This wasn't the way man should go out to the stars, high of heart and glad of soul. Somehow, the great dream had gone awry.

It was a major triumph when Friday met Sam Carter in a beer hall and they went on a small bat together. He found himself liking the big red-headed man. And Carter got into the habit of asking him endless questions—science, history, politics; an officer was supposed to know everything. Friday began to discover how deficient his own education was. He knew physics and mathematics well, had a fair grounding in some other sciences, and had been exposed all his life to the best of Earth's art, literature, and music. But—what was this psychology, anyway? It was a scientific study of human behavior, yes, and it had advanced quite far on Earth by the time the ship left—but why had he never been taught anything but the barest smattering? For that matter, did anybody in the upper ranks ever speak of it?

That might be the reason why the ship's great dream had snarled into a crazy welter of murderous petty politics. Sheer ignorant fumbling on the part of the leaders, even with the best intentions—and he knew many intentions were and had been bad—could have let matters degenerate. Only—why? It would have been so easy to include a few psychologists.

Unless—unless those psychologists had been eliminated early in the game, say at the end of that serene first decade of travel, by the power-hungry and the greedy. But then the whole foundation of his society was rottener than he had imagined. Then even his own class was founded on betrayal.

None of which, he reflected grimly, was going to be any help

at all when the ship got to Centauri.

If it ever did!

Perhaps still another revolution was needed, a revolt of the dreamers to whom the voyage meant something. Only—only there'd been too many mutinies and gang wars already, and more were brewing with every passing watch. The officers were split along departmental lines—Astros, Engys, and Admys—and on questions of personal power and general policy. The common crewfolk were nominally represented by Wilson, but some demon seemed to stir them up against each other, workers with machines and on farms, plain deckhands, technicians of all kinds and grades, hating each other and rioting in the corridors. Then there were the Guilds, the associations of merchants and small manufacturers, fighting for a return to the old free enterprise system or, at least, a separate voice on the Council. There were the goons maintained by each faction, as well as by powerful individuals, bully gangs outnumbering the better-armed police, who were directly under the Captain. But the Captain was a puppet, giving the orders of whatever momentary group or men held the reins of effective power.

This ship isn't going to Centauri, thought Friday. *It's going to Hell!*

TIME aboard the *Pioneer* was divided into the days of twenty-four hours, the weeks of seven and the years of three hundred sixty-five and a quarter days, which had prevailed on Earth. But except for a few annual festivals, there were no special holidays. Working shifts were staggered around the clock, and there was always a certain percentage of the shops and other public places open. For what meaning did time have? It was the movement of clock hands, the succession of meals and tasks and sleeps, the arbitrary marks on a calendar. In a skyless, weatherless, seasonless world, a world whose only dark came with the flicking of a light switch in a room, one hour was as good as another for anything. The economic setup was such that the standard thirty-hour work week provided the common crewman a living wage, and there was not enough work to do for overtime hours to be usual. Most people kept to such a schedule, and passed their leisure with whatever recreation was available and to their tastes. Some preferred to work only part time and to do something else for the rest of their money —one thought especially of the

filles de joie who, though frowned on by the officer caste, were an accepted part of the crew world; and the arrogant goons were another instance. The tradesmen, independent artisans, artists, writers, and others who worked for themselves made their own hours. Some of these lived in officer territory, the pet of a patron or caterers to the entire area; most were in and of the commons.

Evan Friday wandered with a couple of friends—Sam Carter and a dark, slim, intense nineteen-year-old named John Lefebre—into Park Seven, not far aft of the main gyros. The workers were idle, a little bored, and Friday had wearied of spending too much time in the library. He had been reading a good deal, concentrating on the history of the ship and groping for the cause of its social breakdown, but it baffled him and he was still young.

He had realized with a little shock that he had been a crewman for almost six months. So long? Gods, but time went, day after day of sameness, days and weeks and months and years till the end of life and flaming oblivion in the energy converters. Time went, and he was caught in its stream and carried without will or strength. Sometimes he wondered if he would ever get back to the topdeck world. Increasingly it became dim, a dream flickering on the edge of reality, and only once in a while would its sharp remembrance bring him awake with a gasp of pain.

He had shaken down pretty well, he thought. He was accepted in the barracks, though his reserve still kept most of the men at a distance. But they called him "Doc" and referred arguments to his superior education. He was used to shop routine, learning fast and getting close to the promotion he wanted. Next step—superintendent—maybe! He had been invited to the apartments of crew families, and went out drinking or gambling or ball-playing with the others. It wasn't too bad a life, really, and that was in a way the most horrible part of his situation.

They went down a long series of halls until finally one opened on the park. This was one of several such areas scattered through the ship, a great vaulted space half a mile on a side, floored with dirt and turf, covered with hedges and trees and fountains—a glimpse of old Earth, here in the steel immensity of the ship. There were ball courts and a swimming pool and hidden private places under fantastically huge low-gravity flowers. Not far from the boundary of grass were

a couple of beer parlors—fun for all the family.

"Get up some volley ball?" asked Lefebre.

"Not yet," yawned Friday. "Let's sit for a while." He went his words one better, by flopping full length on the grass. It was cool and moist and firm against his bare skin, with a faint pungency of mould which stirred vague wistful instincts in him. His eyes squinted up to the ceiling, where the illusion of blue sky and wandering clouds and a fiery globe of sun had been created.

Was Earth like this? he wondered. Had his grandparents spurned this for a prison of steel and energy, walled horizons and narrow rooms and an unknowable destiny which they would never see?

He closed his eyes and tried, as often before, to imagine Earth. He had been in the parks, he had seen all the films and read all the books and learned all the words, but still it wouldn't come real. In spite of having ventured outside the ship a few times, he couldn't quite imagine being under a sky which was not a roof, looking out to a horizon that hazed into blue distance, seeing a mountain or a sea. Words, pictures, images—a fantasy without meaning.

Rain, what was rain? Water spilling from the sky, sweet and cold and wet on his body, damp smell of earth and a misty wind blowing into his eyes—whenever he tried to imagine himself out in the rain, it was merely grotesque, not the thing of which the books wrote with such tenderness. Someday, when he was old, the ship would reach far Centauri and he might stand under a streaming heaven and see lightning, but he couldn't think it now and he wondered if his old body would even like it.

It would take all the courage and purpose in the ship for men to adapt back to planetary life, the more so if the planet turned out to be very different from Earth.

What chance would a divided, tyrannized, corrupted mob have? What fantastic blindness had made Captain Petrie unable to see the spreading cancer and excise it? Or had he, like his successor Gomez, been merely the pawn and abettor of the greedy and the brutal? What had happened, back in the early days of the voyage? What had gone wrong?

"What'cha thinking about now, Doc?" asked Carter.

"Hm? Oh—oh, the usual." Friday blinked himself back to full consciousness. "Remembering how things were when this trip began, and trying to find

who or what's to blame for their changing ever since."

"Was—were things really so fine then?" asked Lefebre. "Aren't you, uh, romanticizing it?"

"No, no. I've read the official log, remember, as well as other writings. And it was only eighty years ago, not time for many legends to form."

"Well—what was so good then, anyway?" asked Carter.

"The ship was all one unit. Everybody had one great purpose, to get to Centauri, and everybody worked for it. There weren't these social divisions that have grown up since, officers and men were almost like friends, anybody could reach the top on sheer merit, nobody was after himself or his little group above the ship. There wasn't bribery, or fighting, or—oh, all the things which have happened ever since.

"Of course," went on Friday thoughtfully, "there were a lot fewer people then, and they had more to do. Only about two hundred in all, men and women. You know the population's supposed to build up and be at our maximum of ten thousand or so by the end of the trip. But we're only around seven thousand now, that'd be a small town on Earth —damn it, there's no reason for our splitting into castes and factions this way, it's ridiculous . . . Anyway, the ship was more or less of a skeleton inside, the idea was for the crew to complete work on it en route. That was so they could get started sooner, and have more to do. Good idea, and it took ten or twenty years at their easy pace."

"We still have to make things," said Carter. "What d'you think we're doing in the shops, anyway?"

"Sure, sure. Machines wear out and have to be replaced, repairs are needed here and there, new machines and facilities are built, oh, we have a whole little industry that keeps the factory division of the Engy department busy. Then there are the men in the black gang, different deck hands and technicians—we don't have the robot stuff we could make, there's no need for it with plenty of human labor available. My point is, things have stabilized. There's only so much work to be done these days, nearly all of it pure routine, so maybe people get bored. Maybe that's one reason we fight each other."

"The trouble started with capitalism," said Lefebre. He had all the dogmatic conviction of his years. "I've been reading books too, Doc, and heard speeches, and been thinking for myself. Any ship is a natural communist state. There was no reason to let

private people have the farms and the factories and the rec places. What happened? Companies got started, fought each other, op—oppressed the workers, who had to form unions in self-defense; the food processors won out over the producers and formed their own trust; while Engy slowly took over the industries. Then food and factories started fighting, trying to run the ship, trying to stir up each other's workers—"

"So eventually the farms were collectivized, turned into one big food factory," said Friday. "Isn't that what you wanted? It hasn't helped much."

"The damage had already been done," said Lefebre. "The idea of figthing over power had been planted. Only thing to do now is to socialize everything, put it under the Captain's Council, and give the workers the main voice."

Friday had argued with the boy before. There was a strong communist movement aboard, chiefly under Wilson's leadership. *That fat demagogue! A lot of say his precious workers would have if he got what he wants!* Then there were the Guilds and their agitation for a return to the original petite-bourgeois system, their claim that the initial evil had been the formation of monopolies. And there were the officers, most of them obsessed by the aristocratic ideal, though to them it meant no more than the increase of personal authority and wealth.

Friday's upbringing prejudiced him in that direction. Damn it, a ship was not a politicking communism, neither was it a realm of little, short-sighted tradesmen. It was the rule of the best, the *aristos,* a hierarchy restrained by law and tradition and open on a competitive basis to anyone with ability. But it had to be an unquestioned rule, or you got the sort of anarchy which had prevailed aboard the *Pioneer.*

"To hell with it," said Carter. "Let's play some ball."

They got up and strolled over to the courts. The park was, as usual, pretty well filled with crewfolk of all ages, sexes, and classes, generally dressed in the shorts which were the garb of ordinary lounging. Except for the convenience of pockets, clothes were a superfluity when you weren't on the job. Friday wondered how the arrivals at Centauri would stand a winter—another half mythical concept. Ship "weather" was a variation of temperature and ozone balance in the cycle long known to be most beneficial, but the change was so slow and between such narrow limits that it was unnoticeable. Winter—what was winter?

There were several other Engys sitting on the edge of the volley ball court, watching the game in progress with sour faces. "What's the matter, jo?" asked Carter of one.

"Goddam farmers been there for two hours now."

With an uneasy tingle along his spine, Friday noticed the characteristic green worn by workers in the food areas—hydroponic gardens, animal pens, and packing plants. There were a lot of them, sitting some ways off and watching a game whose slowness made it clear that its purpose was to taunt the Engys by keeping the court occupied. Theoretically, the food and factory unions were subdivisions of Wilson's crew-embracing Brotherhood of Workers. In practice, a feud had been going on for—how long, now? Ever since the early violence in the days of the monopolies. It was aggravated by differences in wages, working conditions, the thousand petty irritations of shipboard life. They hated each other's guts.

"Something," said Carter after a while, "oughta be done about this."

He started forward with an unholy gleam in his eyes. Friday caught his arm. "For God's sake, Sam, you aren't going to fight like a bunch of children over the use of a ball park, are you?"

"Ain't busted in a farmer's teeth for him in a long time now," muttered someone behind him.

Friday saw the men gathering into a loose knot. Blackjacks and knuckledusters were coming out of pockets, heavy-buckled belts were being slipped off. The greens, seeing trouble afoot, vented the mob-growl which is the signal for all wise men to start running, and drew themselves together.

Unthinking habit took over, officer's training. Friday was dimly surprised to find himself sprinting out onto the court.

"Stop that!" he yelled. "Break it up!"

The players halted, one by one, and he met sullen eyes. "What'sa matter?"

"You've had your turn playing. Can't you see a riot will start if you don't come back now?"

Faces turned to faces, mouths split into the grin he remembered from his first hour as a crewman. "Well!" said somebody elaborately. "Well, well, well! Now isn't that just a dirty crying shame?"

He saw the fist coming and rolled, taking it on his shoulder. His own flicked out, caught the green in the jaw; stepping in close, he let the other hand smack its way into the muscled stomach.

The rest closed in on him, and

he saw the gray ranks pouring onto the court to his rescue, and the greens after them. With a stabbing sickness, he realized that his own attempt had fired off the riot.

There was a swirl of bodies around him, impact and noise, metal flashing under the artificial sun. He slugged at short range, drowned in the shouting, frantic to get away. Taller than average, he could look over the surging close-cropped heads and see more men on their way. The thing was growing.

Someone slapped at him with a blackjack. He caught the blow on an uplifted arm, numbing it in a crash of pain. Viciously, he kneed the man, yanked the weapon loose, and flailed the screaming face. A fist hit him in the side, he went down and the feet trampled over him. Gasping, he struggled erect, slugged out half blindly. The howling current bore him off without strength to fight it. Through a haze of sweat and panic, he saw knives gleaming.

"Back! Get out!"

The metal rod whistled around his head. He snarled incoherently and yanked it away. "I'm staying here," he mumbled.

"Get out, get out!" The man was screaming, a small frail gray-haired man with two women behind him. "Get out, we don't want you, you, you—rioter—"

Friday leaned against a counter, sobbing air into the harsh dryness of throat and lungs. A wave of dizziness passed through him, dark before his eyes and a distant roaring in his ears. No, no, that was the mob, screaming and thundering in the corridor outside.

A measure of strength returned. "I—not rioting—" he forced through his teeth. "Wait here—only wait here—"

"Why—father, he's no crewman. He's an *officer*—"

Friday let it pass. He found a chair and slumped into it, letting nerves and muscles recover. He noticed dimly that he had been slashed here and there, blood was pooling onto the floor, but it hadn't started hurting much yet.

"Here, take this."

The girl had brought him a glass of whiskey. He downed it in a grateful gulp, letting its vividness scorch down his gullet and run warmly along his veins. Awareness began to come back.

He had stumbled into a small shop, a poor and dingy place cluttered with tools and handicrafts. Plastics mostly, he noticed, with some woodwork and metal, the small ornaments and household objects still produced by private parties. Besides himself, there were the man and his wife, and the girl who must be their

daughter. She was about nineteen or twenty, he thought in the back of his mind, a slim blonde without extraordinary looks but with a degree of aliveness in her which was unusual.

The shopkeeper had locked the door by now. Apparently the riot—and Friday—had swept this way with a speed that took him by surprise. He was close to tears. "They'll start looting now," he said. "They always do. And it isn't a strong lock."

"The police should be here soon," said Friday.

"Not soon enough. I was looted once before. If it happens again, I'm ruined, I'll have to take a crew job—"

"You're hurt," said the girl. "Here, wait a minute, I'll get the kit." Friday could barely hear her voice above the echoing din of the riot, but he watched her with pleasure.

Bodies surged against the plate window until its plastic shivered. A man was backed against it and another one swung a knife and opened his throat. Blood blurred the view, and the girl screamed and hid her face against Friday's breast.

"I—I'm all right now," she whispered presently. "Here, the bandages—"

He had to admire her. *He* still wanted to vomit.

The door shook. "They're trying to batter it down! They want to get in before the police arrive! Oh, God—"

Friday took the metal bar and went over to the door. He felt a vicious glee which was not at all proper to an officer and a gentleman. "You should keep a gas gun handy," he remarked.

"You know only officers are allowed weapons—but the bullies make their own—Oh, oh, help—"

The door broke under three brawny shoulders. Friday swung the improvised club with a whistle and a crack. The first man went down on that blow and did not move. The second, carrying a shaft of his own, raised it in guard. Friday, remembering his fencing, jabbed him in the belly and he screamed and stumbled back with his hands to the wound. The third one fled.

They had been greens, which was something of a relief. Friday would have fought grays as willingly, but that could have been awkward for him later, if he were recognized.

He felt a return of the sick revulsion. God, God, God, what had become of the ship? Why did anyone ever feel sorry for these witless, lawless animals? What they needed was an officer caste, and—

He heard whistles blowing and the heart-stirring cadence of

marching feet. The police had arrived. He shoved his green victim—unconscious or dead, he didn't much care which—outside and closed the door. "Turn your fans on full," he said. "They'll be using gas."

"Oh, you—" The older woman sought for words. "You were wonderful, sir."

Friday preened himself, smiling at the girl, whose answering expression was quite dazzling. "Don't 'sir' me, please," he said, trying to find words which wouldn't sound too story-book silly in retrospect. "I'm only an Engy at present, though I've no use for rioters of any class." He bowed, falling back on the formal manners of topdeck. "Evan Friday, your servant, sir and ladies."

They didn't recognize the name, which disappointed him more than he thought it should. But he got their own names—William Johnson, wife Ingrid, daughter Elena—and an invitation to dinner next "day". He left feeling quite smug about the whole affair.

PARADOXICALLY, the exhibition which had soured Friday on all crewmen led to his forming more friendships among them than ever before. Word spread that Doc had been in on the very start of the fight, been wounded, laid some undetermined but respectable number of greens low, and in general acquitted himself like a good Engy. Men struck up talk with him, bought him drinks, listened to his remarks—strange how warming a plain "hello" could be when he came to work. He was more than merely accepted, and in his solitude could not prevent himself from responding emotionally.

Training told him that an officer and a gentleman had no business associating with any of these—these mutineers. Prudence, a need of friends, and a growing shrewd realization that if he hoped to accomplish anything he would have to fit into the lower-deck milieu, made him reply in kind. He retained his eccentricities, haircut and shave and faint stiffness of manner, noticing that once his associates were used to these they marked him out, made him something of a leader.

His plans were vague. There had been no word from topside, no word at all, though he supposed his family was keeping track of him. Once, in a tavern, he had encountered a group of crewquartering young aristocrats, friends of his, and his sister among them; there had been an embarrassed exchange of greetings and he had left as soon as

possible. The upper world was shut off. But if he could attain some prominence down here, get influential friends, money—Surely he couldn't remain a crewman all his life! Such anticlimaxes just didn't happen to Evan Friday.

He was doing a good deal of work in close collaboration with the superintendent of his shop. The intricacies of the job were resolving themselves; he could handle it. He began to speculate on ways of displacing his superior. It did not occur to him that he might be pulling a dirty trick on another human being.

But something else was going on that distracted his attention. Strangers were dropping into the barracks, husky young men who, it became clear, were full-time attendants of Wilson—in less euphemistic language, his groons. They talked to various workers, bought drinks—recruited! Rumors buzzed around: there was a cache of weapons somewhere, there was this or that dastardly plot afoot which must be forestalled, there was to be a general strike for higher pay and better conditions of work and living. Certainly a young man could make extra money and have some fun by signing on as a part-time goon. You learned techniques of fighting, you drilled a little bit, you played athletic games and had occasional beer parties with old Tom Wilson footing the bill. It had been some time since the last pitched battle between goon squads, but by God, jo, those officers' men were getting too big in the head, strutting around like they owned the ship, it might be time to scutter them a bit.

"They wanted me to join," said Carter. "I told 'em no."

"Good man!" said Friday.

Carter ran a big work-roughened hand through his red stubble. "I ain't looking for trouble, Doc," he said. "I'm saving to get married." He scowled. "Only, well, maybe we will have to fight. Maybe we won't get our rights no other way. And if they did fight, and win, and I wasn't in on it, it'd look bad later on."

"That's the sort of guff they've been feeding you, huh?"

"Well, Doc, you got a head on your shoulders. But—I dunno. I'll have to think it over."

Friday lay awake during many hours, wondering what was on the way. Certainly the other factions aboard knew what was going on—why did they allow it, then? Were they afraid to precipitate a general conflict? Or did they have plans of their own? Or did they think Wilson was merely bluffing?

What did the man want, anyway? He was on the Council already, wasn't he?

Couldn't they see—damn

them, couldn't they see that the ship was bigger than all their stupid ambitions, couldn't they see that space was the great Enemy against which all souls aboard, all mankind had to unite?

A special meeting of the Brotherhood of Workers was called. Friday had only been to one union assembly before, out of a curiosity which was soon quenched by the incredible dullness of the proceedings. Men stood and haggled, hour after hour, over some infinitesimal point, they dozed through interminable speeches and reports, they took a whole watch to decide something that the Captain should have settled in one minute. He realized wryly that a major qualification of leadership was an infinite patience. And skill in maneuvering men, swapping favors, playing opponents off against each other, covering the operations that mattered with a blanket of parliamentary procedure and meaningless verbiage. But he had a notion that this meeting was one he should attend in person, not simply over a telescreen.

The hall was jammed, and the ventilators could not quite overcome the stink of sweating humanity. Friday wrinkled his aristocratic nose and pushed through to the section reserved for his grade, near the stage. He found a seat beside a friend with a similar job, and looked around the buzzing cavern. Faces, faces, faces, greens and grays intermingled, workmen all. In a moment of honesty, he had to admit that there was more variety and character in those faces than in the smooth soft countenance of the typical lower-bracket officer. These visages had been leaned down by a life-time of work, creased by squinting, dried by the hot wind of furnaces. He had gained considerable respect for manual skill; it took as much, in a way, to handle a lathe or a torch or a spraygun as to use slide rule and account book.

Only why should these complementary types be at War? They needed each other. Why couldn't they see the fact?

Several men filed onstage, accompanied by goons whose similar clothes suggested uniforms. Friday's mind wandered during the speech by the union's nominal president. The usual platitudes. He woke up when Wilson came to the rostrum.

He had to admit the Councilor was a personality. His voice was a superbly versatile instrument, rolling and roaring and sinking to a caress, drawing forth anger and determination and laughter. And the gross body, pacing back and forth, did not suggest fat, it was tigerishly

graceful; a dynamo turned within the man. In spite of himself, Friday was caught up in the fascination.

Wilson deplored the riot, scolded his followers, exhorted them to forget their petty differences in the great cause of the voyage. He said he was recruiting "attendant auxiliaries" from green and gray alike, and mixing them up in squads, so that they could learn to know each other. They were fellow workers, they simply happened to have different jobs, they needed each other and the ship needed both.

"You *are* the ship! We've got to eat. We've got to have power, heat and light and air, tools, maintenance. *And nothing else.* Everybody else aboard is riding on your backs.

"Who keeps the ship moving? Who's pushing us to far Centauri? Not the officers' corps, not the Guildsmen, not the doctors and lawyers and teachers and policemen. Not even you, my friends. We reached terminal velocity eighty years ago. Old Man Inertia is carrying us to our far home. Don't let anybody claim credit for that, nobody but Almighty God.

"But we've got to eat on the way. We've got to have power to keep us alive, keep out the cold and the dark and the vacuum. Once landed, we'll still need all those things, we'll have to start farms and machine shops. We need *you*. You, green and gray, the the keel of this ship, and don't you ever forget it!"

He went on, with a vast silence before him and no eye in the chamber leaving his face. The workers were one, they had to unite to see the ship through, their feuds were a hangover from the bad old days of unrestrained capitalism. He hinted broadly that certain elements kept the pot boiling, kept the workers divided among themselves lest they discover their true strength and speak up for their rights. He instilled the notion of cabals directed against the crewmen—"who make up more than six thousand people, out of seven thousand!" and of plots to overthrow the Council, establish all-out officer rule and crush the workers underfoot.

"God, no!" cried Friday. He caught himself and relapsed into his seat, half blind with rage. His outburst had gone unnoticed in the rising tide of muttered anger.

Trying to control himself, he analyzed the speech as it went on. A wonderful piece of demagoguery, yes. Nothing in it that could really be called seditious—on the surface, merely an exhortation to end rioting and general lawlessness. No one was mentioned by name except the

Guilds, who didn't count anyway. No overt suggestion of violence was made. The Captain was always spoken of in respectful tones, the hint being that he was the unhappy prisoner of the plotters. A list of somewhat exaggerated grievances was given, but the ship's articles provided for freedom of speech and assembly. Oh, yes, very lawful, very dignified—and just what was needed to incite mutiny!

At the end, the cheering went on for a good quarter-hour. Friday clamped his teeth together, feeling ill with fury. When the racket had subsided, Wilson called for the customary question period.

Friday jumped up on his seat. "Yes," he shouted. "Yes, I have a question."

"By all means, brother Friday," said Wilson genially. So—he remembered.

"Are you preaching revolution," yelled Friday, "or are you lying because you can't help yourself?"

The silence was short and incredulous, then the howling began. Friday vaulted into the aisle and up onto the stage, too full of his rage to care what he was doing.

Wilson's voice boomed from the loudspeakers, slowly fighting down the tumult: "Brother Friday does not agree with me, it seems. He has a right to be heard. Gentlemen, gentlemen, quiet please!" When the booing had died down a little: "Now, sir, what do you wish to say? This is a free assembly of free men. Speak up."

"I say," said Friday, "that you are a liar and a mutineer. Your talk has been a stew of meaningless words, false accusations, and invitations to rebellion. Shall I go down the list?"

"By all means," smiled Wilson. "Brother Friday, you know, has a somewhat unusual background. I am sure his views are worth hearing."

The laughter was savage.

"I hardly know where to begin," said Friday.

"It is a little difficult, yes," grinned Wilson. The laughter hooted forth again, overwhelming him, knotting his tongue. He twisted the words out, slowly and awkwardly:

"Just for a start, then, Mr. Wilson, you said that the greens and grays together are almost the entire ship. Six out of seven thousand, you said. Anyone who's taken the trouble to read the latest census figures would know it's not true. There are about a thousand men working in all the branches of Engineering under officers, and about five hundred in the food section. There are about three hundred in

public services of one sort or another—police, teachers, lawyers and judges, administrative clerks, and so on. Guildsmen and other independents together make up perhaps seven hundred. The entire officers' corps, *including their families,* add up to maybe five hundred. In short, out of some three thousand money-earning, working people aboard, greens and grays add up to half.

"I don't include the four thousand others—housewives, children and aged." With an essay at sarcasm: "Unless you want to enroll them in your goon squads too!" He turned to the assembly. "Fifteen hundred people in green and gray, to dictate to the other fifty-five hundred. Is that your precious democracy?"

"Boo! Boo! Throw 'im out! Spy! Blackleg! Boo!"

"You seem to be distorting my speech now," said Wilson mildly. "But go ahead, if it amuses you."

"God damn it, man, it's the ship I'm thinking about. I know there are plenty of abuses. I'm the victim of one myself—"

"Ah, yes, a pathetic fate," said Wilson lugubriously. "He was forced by incredibly cruel people to come down among us and earn his living!"

The shouting and the booing and cursing and laughing drove Friday off the stage. He hadn't a chance, he was beaten and routed; and he had been made ridiculous—which was much worse. He fled, sobbing in his throat, yelling at the silent corridors and damning the ship and the voyage and every stinking human aboard her. Then he found a bar and drank himself blind.

"I ADMIRE your courage," said William Johnson, "but I must admit your discretion leaves something to be desired. You should have known you had no chance against a professional politician."

"Now he tells me," said Friday ruefully.

"I hope it hasn't made things —difficult for you, Evan." There was an anxiety in Elena's voice which pleased him.

He shrugged. "I didn't lose too many friends. But I lost a lot of standing."

Oddly enough, his mind ran on, it had been Sam Carter who had defended him most stoutly in the barrack-room arguments, Sam who had beaten him up when he first arrived and now stood by him, though it meant damning Wilson. The fact was comforting, but puzzling. It was hard to realize that people just didn't fit into the neat categories of tradition.

They were sitting in the John-

sons' apartment, a small bright place where he had been a frequent guest of late. He had fallen into the habit of dropping in almost "daily", for the merchant class had something to offer he had never looked to find on the lower levels, and something, besides, which was strange to the topdecks. The Johnsons and their associates were not the narrow-souled tradesmen their reputation among other classes insisted; they were, on the whole, people of quality and some little culture. If they had a major fault, he thought, it was a certain conservatism and timidity, a nostalgia for the "good old days" with which he could only partly sympathize. And they had their own tired clichés, meaningless words setting off automatic emotional responses—"free enterprise," "progressivism," "Radical"—but then, what class didn't?

He found himself increasingly aware of Elena. She was pleasant to look at and talk to; the other lower-deck women had seemed meretricious or merely dull. And at the same time she had an enterprising sincerity and an, at times, startlingly realistic world-view which would be hard to find in officers' women.

"And what do you expect to happen next?" asked Mrs. Johnson. The fact of Friday's being from topdeck earned him an automatic respect among Guildsmen, who still wanted leaders. Their own agitation was simply for justice to themselves, and Friday had to admit their cause seemed reasonable.

"Trouble. Open fighting—there've been brawls almost every watch between the goons of the Brotherhood and those of the officers. Maybe mutiny."

Johnson shuddered. He was bold enough in conversation, but physically timid. "I know," he said. "And the laborers have been making difficulties for private shopowners too. They've been smashing up bars, especially, when they're drunk."

"Want to socialize liquor, eh?" Elena's laugh was strangely merry. "Maybe we should call for a representative of the tavern-keepers on the Council."

"Only a representative of all tradesmen," said Johnson stiffly. To Friday: "We won't stand for it much longer. The younger Guildsmen are forming protective associations."

"Well, you need goon squads these days," nodded Friday.

"Goons! Certainly *not!* Protect—"

"A goon by any other name would smell as sweet," said Elena. "Why not call them by their right name? If we have to fight, we'll need fighting units."

"Not much good without

weapons and training," said Friday. "You have small machine shops here and there. You should start quietly making knives, knuckledusters, and so on, and exercise squads in their use. Wouldn't take long to equip every man."

"Why, you're speaking sedition!" whispered Johnson. "That's no better than Wilson."

Friday flung out of his chair and paced the floor. "Why not?" he said angrily. "It's not as if you meant aggression. The police can't be everywhere, and in any case they're under the control of whoever owns the Captain. At the moment, that happens to be an uneasy cabal of Engy and Astro officers, together with Wilson, who's nominally their associate and actually trying to get the power from them. If the officers win, you may expect to see a rigid caste system imposed on all the ship. If Wilson wins, you'll get a nominal communism which, if I've read any history at all, will rapidly become the same kind of dictatorship under different labels. Either way, the Guilds lose. You won't have a voice in affairs till you're strong enough to merit one."

"Evan, I thought you were an officer," said Elena, very softly. "I thought even now—"

"Of course I am! A ship has to have discipline and a hierarchy of authority, but that's precisely what we haven't got now. What I want to see is a strong captain with an officer corps made of the better existing elements—oh, such as my father, for instance, or Lieutenant Steinberg, or any of some hundred others. Most of the lower-echelon officers are decent and sincere men, Elena; they just haven't got any effective voice in affairs; they take orders from the Captain without regard to the fact that he takes *his* orders from two or three warring cliques. And the holes left in the corps could be filled competitively from the lower ranks."

"Ah—" Johnson cleared his throat shyly. "Pardon me, Evan, but wouldn't there be the same tendency as before for rank to become hereditary?"

"Naturally, superior people tend to have superior children," said Friday somewhat snobbishly. "But today, I admit, while there is still competitive examination for promotion, there is a certain favoritism in judging the results; and few or no crewmen get the education needed to prepare for the tests." He clenched his fists. "God, what a lot of reform we need!"

Elena came over and took his hand. "You know more about the ship than anyone in the Guilds, Evan," she said. "Certainly your military knowledge is

the best we can get. Will you be with us?"

He looked at her for a long while, "What have I been saying?" he whispered. "What have I been saying?"

"Good things, Evan."

"But—Bill, you're right. I have been talking violence." He smiled uncertainly. "I've been overworking my mouth lately, haven't I?"

"You won't help us—?"

"I don't know. God, I don't know! Taking the law into our own hands this way—it's contrary to the articles, it's contrary to everything I've ever believed."

"But we have to do it, Evan," she said urgently. "You advised it yourself, and you're right."

"Blast it, I'm still an Engy. I still have to live with my coworkers."

"You could quit your job and come live with us. The Guilds would pay you a good wage just to get their protective squads organized."

"So now I'm to become a paid goon!" he said bitterly.

"The time may come when the ship will need your goon squads."

"I don't know," he said dully. With sudden vehemence: "Let me think! I've been kicked into a level I don't understand, caught up in a business I don't approve. My father told me, before they sent me away, that I was still an officer. And yet—Let me think it over, will you?"

"Of course, Evan," said Johnson.

He bade clumsy farewells and went out into the corridor and back toward his dwelling place, too preoccupied to notice the man who fell quietly in on either side of him. When one of them spoke, it was like a blow:

"This way, Friday."

"Eh? Huh?" He stared at them. Wilson's goons. "What the hell do you want?"

"We just want to take you to Mr. Wilson, jo. He wants to see you. This way."

An elevator took them up to officer level. Actually, thought a dim corner of Friday's mind, the term should have been "down," since they were moving in the direction of increasing centrifugal "gravity"; but the notion of the upper classes living "upward" was too ingrained for usage to change, even though on any one level "down" meant the direction of acceleration. Silly business.

The whole expedition was a cosmic joke.

He had not been in this territory for half a year, and it jarred him with remembrance. He stayed between his escorts, looking directly ahead, trying not to see the familiar people who went by. It was doubtful if any of

them looked closely enough to recognize him.

Wilson's offices occupied a suite in the Administrative section, near the bows and just under the ship's skin. Her screens made that area as safe as any other, and the fact that the pilot room and hence the captain's quarters had to be directly in the bow on the axis of rotation—the only spot where there was an outside view except via telescreen—had dictated the placement of all officer areas nearby.

The inner office was a big one. Wilson had had it redecorated with murals which, in spite of their subjects—heroic laboring figures, for the most part—Friday had to admit were good. Indeed, these troubled decades had produced a lot of fine work.

He wrenched his attention to the man behind the great desk. Wilson sat easy and relaxed, puffing a king-sized cigar and studying some papers which he put aside when the newcomers entered. He rose courteously and smiled. "Please sit down, Mr. Friday," he said.

The two goons took up motionless posts by the door. Friday edged himself nervously into a chair.

"You know Lieutenant Farrell, of course," said Wilson.

Friday felt a shock at seeing the lean middle-aged man in officer's uniform seated at Wilson's right. Farrell—certainly he knew Farrell, the man had taught him basic science. Farrell had for years been a general assistant to Captain Gomez.

"I'm sorry to see you associated with this man, sir," he said numbly.

"Quite a few officers are," said Farrell gently. "After all, Mr. Wilson is a Councillor."

"Have a cigar, Mr. Friday," said Wilson.

"No, thanks. What did you want to see me about?"

"Oh—several things. I wanted to apologize for the somewhat unfortunate result of the union meeting. You had a right to be heard, and it is a shame that some of the men got a little rowdy."

You know damn well who made them that way, thought Friday.

"I liked your courage, even if it was misguided," said Wilson. "You're an able young man, and honest. I'd like to have you on my side."

Friday wished he had accepted the cigar. It would have been a cover for the silence that came from having no retort to make. *Another little political trick. I'll know better next time, if there is a next time.*

"You seem to think I'm some kind of monster," said Wilson.

"Believe me, I have only the interests of the ship at heart. I think that we must be united in order to succeed in this voyage. But to achieve that union, we must have justice. You yourself, as a victim of the present system, ought to realize that."

"We need leadership first," said Friday slowly. "Good leadership, not political dictatorship."

"There is no intention of setting one up," said Farrell mildly. "Certainly you don't think that officers will be replaced by commissars! Would I be in this movement if that were the case? No, we simply want to replace the corrupt and the incompetent, and to install a socio-economic system adapted to the peculiar needs of the expedition."

"Nice words. But you're building up a private army, and you're planning mutiny."

"I could get angry at that charge," said Wilson. "Have I ever so much as suggested replacing the Captain? If the ship's articles are to be amended, it will be by due process of law."

"A rigged Council and a fixed election! Sure! Keep the Captain in his present job of figurehead!"

"Now it is you who are seditious. Look, Mr. Friday. I do believe you are innocent of the charges made against you, and I'd like to see you cleared and your rank restored. Promotion will be rapid for competent men, once things are running properly again. But these are tough times, and you can't expect me to take all that trouble for an enemy."

"So now you're trying to bribe me. Why, for all I know it was you who framed me in the first place."

Wilson's carefully learned manners dropped from him. It was a plain Engy who spoke, with more than a trace of anger: "Look, jo, d'you think you're so goddam important that it makes any difference what happens to you? You think I need you? I'm just trying to be fair, and give you a chance to get back where you were. You can be useful, sure, but you're not fixed to do any harm. Especially if you got fired from your job."

Friday stood up. "That's enough," he said. "Good-bye, Mr. Wilson."

"Have it your way, jo. If you change your mind, you can come back in a day or two. But don't be any later."

"I wish you would think it over," said Farrell.

"Good-bye!" Friday stormed out of the office.

He cooled off on the trip back. Gods, talk about burning

bridges! He didn't belong anywhere now.

No—wait—the Guilds. He still didn't much like the thought of espousing their cause—but where else in all the universe could he go?

He took a certain malicious pleasure in telling off his boss when he quit. Then he drew his time, collected his few belongings, and went back to William Johnson's home.

THE food trust was overthrown largely from within—a general strike of its underpaid workers, accompanied by violence—but that overthrow was instigated by leading Engineers as a means of overcoming their food-producing rivals. The Engineers wanted a return to the small private farms of the first years—*divide et impera*—but the upper ranks of Administration favored socializing the producing, packing, and distributing establishments, since they would then be under effective control of the small but efficient Admy bureaucracy. After a good deal of intriguing, socialism won, and the Engineers found themselves faced with a new rival as powerful as the old.

Two years later, Captain Petrie died. Both Engineering and Administration nominated a hand-picked successor, ignoring the rule that the first mate should take the office. This was a young man, Juan Gomez, associated with the Astrogation Department. Astro, being a small and exclusively officer group, lacked the strength and support of the contending overlords; but it had the law on its side, together with a surprising adroitness at playing its enemies off against each other. Gomez was named.

For a few years there was relative quiet, except for clashes between various bully gangs hired by the overlords. The workers, green and gray, were increasingly restless, the younger generation of officers in all departments ever more arrogant and exclusive. In the forty-fifth year of the great voyage, open warfare broke out between the private forces of Engy and Admy over the exact extent of Admy jurisdiction—the latter had been using the ship's internal law, which it was supposed to administer, as a means of aggrandizing its leaders. It was not what Earth's bloody history would have considered a real war—the two sides lacked very effective weapons, and were small—but people were getting killed, property was damaged and vital services suspended. Astrogation rallied the police and neutral groups to suppress the fighting. The ship's articles were amended, the most important re-

spect being the transfer of police power from Administration to the Captaincy—in effect, to Astro. Administration didn't like it, but the Engineers, on the old half-a-loaf principle, supported the measure. Astro began building up followers, money investments, and political connections.

Five years later the lower Engineering ranks, having failed to obtain satisfaction in any other way, resorted to violence. The revolt was suppressed, but concessions were made in a Captain's Court which few officers liked.

Six years after that, Duncan, chief of Administration, attempted to seize the Captaincy in a coup d'etat which was defeated with the help of the Engineering bosses. Duncan and his immediate followers suffered the usual penalties of mutiny, but his power was left unbroken and passed to his successor. This was shown to be the work of Astro: in the sixty-first year, Admy and Astro together swung enough political power to break up officer ownership of factories and socialize them, and enough fighting strength to enforce the decree.

Some fifteen years passed without too much trouble as the ship adjusted to the new order of things. All important facilities were now under ship ownership and control, tracing back ultimately to the Captain and his Council. The old departmental divisions remained, but officers within them acted as individuals and their combinations were often across such party lines. Some wanted a return to the former state of affairs, but most were content to intrigue for control of this or that department of ship life—ultimately, the goal was to run the Council, from which all authority stemmed. A combine made up largely of Astro officers held the balance of power, but it was a constant battle of wits to maintain it. In this period began the first great outburst of characteristic ship forms in art, literature, and music, new departures which would have meant little to an Earthman but which answered a need born of space and loneliness and the great overriding purpose. In science, some first-rate work was done on deep-space astrophysics and the biological effects of cosmic radiation.

Meanwhile, however, the laboring classes demanded some voice in affairs. Unions were organized on a ship-wide basis and finally joined together in Wilson's Brotherhood. At this time, too, the remaining independents —craftsmen, artisans, tailors, tavernkeepers, personal-service people, private lawyers, and their kind, including no few

scientists and artists of one sort or another—began organizing the Guilds for mutual protection and advancement; but they had no way to win an effective voice.

Labor, however, could and did act. The great strike of 2201 broke the time of peace. On the principle that certain services were essential to the lives of everyone, the Council tried to break the strike, and for several days a running war was fought up and down the corridors of the ship. The union was finally suppressed, but it won what amounted to a victory, a representative on the Council. The old-line officers were outraged, but Wilson set to work at once making alliances with the younger and more liberal ones.

His official program was frankly communistic. The large fortunes and followings of the highest officers were to be broken up, all property except the purely personal was to belong to the ship, plants were to be governed by workers' councils. On the other hand, some kind of supreme hierarchy would still, obviously, be needed; and no doubt many of the ranking men who joined Wilson's cause were animated by the thought of promotion. There were also a certain percentage of sincere idealists who were disgusted with the intriguing and corruption of the ship's government, the unseemly brawling and private gangs, the not yet overcome unfairness of a caste system.

Besides Wilson's group, there were several others in high places, with schemes of their own. Certain men wanted to grab supreme power for themselves; others wished a return to this or that stage of previous ship's history, say the good old days when the Engineers virtually ran affairs, or to advance along certain lines that seemed desirable to them—such as, for instance, a frankly hereditary officer caste controlling all wealth and authority.

Gomez still had the chairmanship of the Council, the small but strong police force, and a solid following among conservative elements including the bulk of the officer's corps and perhaps even a majority of the commons. And Astro had the Captain. One suspected that McMurtrie, chief of that department, had the final say in matters, though no one outside of Astro knew for certain.

Only—how long could it continue? The ship was ready for another explosion. How long before it came?

Gods! thought Friday sickly. *Gods, what a history! What a hell's broth of a history!*

HE HAD about three weeks before the crisis broke, and had not thought he could go so long on as little sleep as he got.

There was first the matter of raising his troop. A call for volunteers at a special Guild meeting brought disappointing results. He and a few others had to go on personal recruiting tours, arguing and propagandizing and even applying certain subtle threats—social disapproval, boycotting, and whatever else could be hinted at obliquely enough not to antagonize. Some rather slippery sophistry got by at times, and Friday had to be careful to suppress his own uneasy doubts about his cause. The motto was always organization for defense, formation of a band which could help the regular police if they should need it, and he found it necessary to shout down the hotheads who had been his eagerest followers. He often had occasion to remember the ancient maxim that politics is the art of creating an equality of dissatisfaction.

He was helped by events. As the watches went by, disorder grew like a prairie fire. Hardly a "day" passed that the police were not called to stop a brawl between Wilson's gangs and the goons of other factions, or to halt the wrecking and plundering of some shop. They were bewildered and angry men who came to Friday, they wanted to fight somebody—it didn't much matter who.

"But what the glory is Wilson doing it for?" said Mrs. Johnson. "He's only hurting his own cause. He should be calming them down, or he'll turn all the ship against his people."

"That," said Friday with a bleak new insight, "is what he wants."

Officially, of course, the Councillor deplored such lawlessness and called on all workers to desist. But his language was weak; it only turned strong when he cited the grievances which had driven them to such measures. Friday buckled down to training his gang.

He had no military knowledge except vague impressions from books, but then neither did anyone else who mattered. Only the police were allowed firearms, and his conditioning was too deep for him to consider manufacturing them. It would hardly have been practicable anyway. But the tools of the artisans could make the nasty implements of infighting. And it occurred to him further that pikes, axes, and even short swords were valuable under ship conditions. However clumsily wielded, they were still formidable. He thought of bows too, but experiment showed him

that more practice would be needed than his men had time or patience for.

He worked three shifts each day, drilling those who could attend any one of them. Practice with weapons, practice in working as groups, practice at rough-and-tumble—it was all he could do, and he more than half expected his motley squads to break and run if it ever came to action. He had about two hundred all told, shopkeepers, artisans, personal-service men, office workers, intellectuals of all stripes; a soldier's nightmare.

But after all, he consoled himself, it wasn't really an army he was trying to organize. It was an association of ordinary peaceable men who had found it necessary to form their own auxiliary police force. That was all. He hoped to heaven that was all.

They used an empty storage space near zero-gravity as their armory. You could do weird and wonderful things at low-weight, once you got the hang of it. He tried to be as unobtrusive about his project as possible, and especially to keep secret the fact of his most lethal innovations. The police would most likely confiscate things like those, if they heard of them. All the rest of the ship needed to know was that the Guildsmen had started a protective association, and if the Brotherhood wanted to make a huge joke of it, so much the better.

Nevertheless, Friday was irrationally pleased when a few of his men got into a fight with some greens in a bar and beat the devil out of them.

He was catching an exhausted nap in Johnson's apartment when Elena woke him with the news that the Brotherhood had mutinied.

"OH, NO!" he exclaimed. Sleep drained from him like water from a broken cup as he got to his feet.

"Yes," she said tonelessly. "The intercom just announced a state of emergency, told all crewfolk to get home and stay there, and not to take part in any violence on pain of being considered mutineers—what else can it mean?"

He heard the brazen voice again, roaring out of the corridor loudspeaker, and nodded. "But I'd like to see it done," he said thinly. "The ship is six miles long and two miles in diameter. How does Wilson expect to take it over with a thousand men at best?"

"Seize the key points and the officers," she flared. "How else?"

"But the police—he can't hold anyplace against men with gas guns, firearms, grenades—"

"He must think he can! Are we going to sit here and do nothing?"

"Not much else we can do. That order to stay inside means us, too."

"Evan Friday, what have you been organizing the Guildsmen for?"

"Get on the visiphone," he said. "Call up everyone before somebody or other cuts off our communications. Tell them to stand by. But we can't go rushing out blindly."

She flashed him a smile. "That's more like it, Evan!"

He looked out the door into the hall. Men, women, children, were running each way, shouting, witless with panic—*This is revolution,* he thought. *You don't know what's happened, you don't know who's fighting or where the fighting is, you sit and wait and listen to the people going they don't know where.*

Presently Elena came to sit on the arm of his chair. "Where's father and mother?" she asked, and he saw the hard-held strength of her breaking as immediate pressure lifted. "They said they were going to visit Halvorson's; where are they—"

"I don't know," he bit out. "They must have taken refuge with someone. We'll just have to wait here."

"I couldn't raise everybody," she said. "A lot of lines were jammed. But some of them said they'd pass the word along by messengers."

"Good! Good folk!" It was enormously heartening to know that some had remained brave and level-headed.

"I didn't even try to call headquarters," she said wryly. "But maybe we could offer the Captain our help."

"Let's see what happens first." Friday pounded his knee with a white-knuckled fist. "It's not that I'm scared to fight, Elena. In fact, I'm scared green to sit here and not fight. But we'd just blunder around, have no idea of where to go or what to do, probably get in the way of the police—"

The lights went out.

They sat for a moment in a blackness which was tangible. Elena choked a cry, and he heard the screaming of women out in the hall.

"Power cut off," he said unnecessarily, trying to hold his voice steady. "Wait—hold still a minute." He strained his ears into the darkness and could not hear the muted endless hum of the ventilators. "Yeah. Dead off."

"Oh, Evan—if they hold the converters, they can threaten to destroy them—"

"Take more than they've got

to do that, darling." The word came unconsciously, unnoticed by either of them. "But if they can hold off for a long enough time, they can make things awfully tough for the rest of the ship."

"It's—been tried before, hasn't it—?"

"Uh-huh, during the great strike. The police took the converters without difficulty and operated them till the trouble was over. So—if Wilson's tried it again, he must think he can hold the engine section against attack. Or maybe—maybe he doesn't expect an attack at all—"

"You mean the police are in his pay—no!"

"I don't know what I mean." Friday groped to his feet, and his only emotion was a rising chill of anger. "But it's time we found out. I'm going to get the men together."

They located a flashlight and went down the corridors toward the armory. It was utterly black save where their own beam wavered, a smothering blackness in which Friday thought he could hardly breathe. That was nonsense; the air wouldn't get foul for hours yet; but his heartbeat was frantic in his ears. People had retreated, the halls were almost empty—now and then another glow would bob out of the tunnel before them, a weirdly highlighted face. The elevators were dead; they used ringingly echoing companionways, down and down and down into the guts of the ship.

Silent ship, darkened ship; it was as if she were already dead, as if he and Elena were the last life aboard her, the last life in all the great hollow night between Sol and Centauri. Elena sobbed with relief when they came to the armory.

Friday had maintained a rotating watch there, sentries who challenged him in voices gone shrill with fear. Others were arriving, men and their families, the agreement being that in emergency this would be the rallying place. It was easily defensible, especially with the weapons stockpiled there.

Flashlights danced in the gloom, picking out faces and shimmering off metal, and the great sliding shadows flowed noiselessly around the thin beams. Friday shouted till the walls rang, calling the folk around him, seeking to allay the rising tide of hysteria.

"As soon as enough of us are here," he said, "we'll go out and see what we can do."

"The hell you say!" exploded a voice from the murk. "We'll stay here where we can defend ourselves!"

"Till the oxygen and the heat

are gone? Would you rather choke and freeze?"

"They'll reach some agreement before then. Wilson can't let the whole ship die."

"They'll reach Wilson's kind of agreement, if any. Something's happened so the police can't protect us any more. We'll have to act for ourselves."

"Go out and get killed in the dark? Not I, Mister!"

Friday had to resort to all the tactics of demagoguery—he was getting good at it, he thought—before the recalcitrants could be brought around. The agreement finally was that some men should stay to guard the women and children, while the rest would go out and—

And what? Friday did not dare admit that he had no idea. What, in all those miles of lightless tunnels and cave-like rooms, could they do?

There was an altercation at one of the doors. Friday went over to it and found a pair of pikemen thrusting back a shadowy and protesting group of men.

"Bunch of goddam workers want in," explained one of the guards.

Friday shone his torch into the vague mass and picked out the battered red face of Carter. "Sam! What the hell—"

"Fine way to treat us. We only want to join your bunch, Doc."

"Huh? I thought you were a Brotherhood man!"

"Yeah, but not a mutineer. I didn't think Old Tom'd ever try anything like this—just thought we'd roughhouse it a bit with the topdeck goons and holler for our rights. But God, Doc, his men got guns!"

"What?"

"Fact. Ain't too careful about using them, either. Me and some others that hadn't joined the goons were given a last chance to do it or get brigged—a goon squad come into the barracks and told us. But we got the jump on 'em, and here's my proof." The light glimmered off the pistol in Carter's fist. "We had a running fight to get down to low-weight, but others joined us on the way—some o' the boys who'd signed on as goons but didn't see mutiny, and others from here and there. They've took over the engine-section, Doc, and the gyros and the farms. There's men here with me who was on duty when the goons came in and kicked 'em out. Some of 'em had buddies who got shot for not moving fast enough. We wanna fight with you now, Doc!"

Numbly, Friday waved his sentries aside and let the workers file in. Gray and green, burly

men with smoldering eyes, perhaps two score all told—a welcome addition, yes, but they were the heralds of evil tidings.

He let his watch sweep out another hour of darkness and restlessness and slowly rising temperature. Without regulation, the room was filled with the animal heat of its occupants, the air was hot and foul. Later would come the cold.

Others straggled in, one by one or in small groups, Guildsmen and some more of the laboring class. But there was no further news, and presently the influx ceased. It was time to strike out.

A count-off showed that he had a little over a hundred men ready to go. Go—where?

He decided to head for the upper levels. There should be his best chance of getting information—there, too, was the nerve center of the ship. If Wilson held her heart and lungs, her brain might still be accessible.

They went out, a hundred men armed with hand weapons of the oldest sort and a few scattered guns, daunted by the night and their loneliness. Silently, save for heavy breathing, they streamed down the corridors and along the companionways, only an occasional short flash of light revealing them. Friday drew on his memory of the ship's plan, which every cadet was required to learn, to guide them well away from the key points which Wilson held. He didn't want more fighting than he could avoid.

The ship was dark and still. Someone whimpered behind him, a little animal sound of fear.

They wound up the levels, feeling their bodies grow heavier, feeling the sweat on their skins and the bitter taste of panic in their mouths. Once in awhile someone ran before them, sandaled feet slapping down the tunnel and fading back into the thick silence.

"God," whispered Carter. "What's happened to the ship?"

His voice was shaken, and Friday realized that the same despair was rising in him. It wouldn't take many hours of night and stillness and creeping chill before everyone aboard capitulated, before the entire crew would be ready to assail anyone that still tried to resist. "Come on!" he said harshly.

They were in the upper levels when a flash gleamed far down the hall, someone nearing. Friday heard the sigh of tension behind him. If this was a mutineer gang and—

"Who goes?" The cry wavered in the dark. "Who is it?"

"Put up your hands," shouted Friday. The echoes ran down the length of the corridor, jeering at him.

"Come close."

It was a single man in Astro uniform. Friday recognized him—Ensign Vassily, secretary to Farrell. Farrell!

The gun was heavy in his fist. "What do you want?"

"Friday—Friday—" It was a sob. The flashbeam glistened off sweat and tears. "God, man, you're here! We've been looking—"

"Looking! What for? Aren't you with Wilson too?"

"Not now. The mutiny's got out of hand. Wilson has the police trapped, Farrell can't leave—he managed to send a few of us out, he knew of your gang—Friday, it's up to you, you've got to save the ship!"

"Out of hand— What the devil are you talking about?"

"Wilson was too smart." The boy's breath sobbed in his throat. "He didn't let any of his top chiefs in on his plans till it was too late. He—he started a riot down in Park Four, a big riot that brought out all the police force. Then his men—he'd gotten some firearms from a police officer that was with him, we didn't know he had anyone in the police— His men came with machine guns and flame throwers. They've got the force bottled up in the park—and meanwhile they've taken over the rest of the ship!"

So that was it, thought Friday. Simple! You lured all your enemies into one of the park sections and then mounted guard over the half-dozen exits. A few men with weapons and gas masks could keep a thousand besieged until cold and darkness and choking air forced them to surrender.

"Where do *you* fit in?" He shook Vassily till the teeth rattled in the ensign's jaws. "What do you mean, the mutiny's out of hand? Did you engineer it yourself?"

"Farrell—the Captain—I do not know, Friday, so help me God I don't know what it's all about!"

With a sudden terrible conviction: "Gomez and Farrell framed me, didn't they? They had me broken down to crewman!" When Vassily remained still, Friday cracked the pistol barrel against his head. "That's right, isn't it?"

"Uh—yes, no, I don't know—Friday, you've got to help us! We've been searching the ship for you, running down all the corridors with Wilson's men ready to shoot, you're the last one who can help!"

"Help?" Carter's laugh was

bitter. "Spears and axes against guns?"

"Most of Wilson's men don't have guns. He d-d-doesn't want 'em to get out of hand, I guess. Just the ones holding in the police, and holding the k-key points—"

Friday's mind began turning over with an abnormal speed and sureness. There wasn't time to be afraid, not now, not when all the ship was darkened. "That means the rest of the ship's weapons are still in the arsenal," he said rapidly. "I suppose Wilson's mounted guard over them?"

"I—I s-s-suppose so—"

Friday's memories riffled through the plans of the ship. The police quarters were near the bows, with the arsenal behind them, just under the ship's skin. Beyond that lay a boat blister, whose airlock offered an emergency exit—or entrance. Wilson's guards would be inside the ship, though, in front of the doors leading into the police area. He hoped!

There were other blisters along the length of the ship, holding the boats which would land when the *Pioneer* had taken up an orbit around a planet. And there were spacesuits stored at each one.

"This way!" he said.

It was strange walking on the outside. Eyes accustomed to a narrowness of walls swam with vertigo in naked space. Centrifugal force threw blood into the head, the heart began to beat wildly and the body refused to believe that it was not hanging downward. You had to be careful how you stepped—if both magnetic shoes were off the hull at once, you would be thrown into space, you could go spinning out and out forever into the dark between the stars.

Above your feet was the mighty curve of the ship, dimly gleaming metal tilted at a crazy angle against the sky, elliptical horizon enclosing all the life in more than a light-year of emptiness. It rang faintly under human footfalls, and the suit was thick with your heartbeat and breathing, but over that lay the elemental silence. It was a silence which sucked and smothered, the stupendous quiet of vacuum reaching farther than a man could think, and the tiny noises of life were unnaturally loud against it.

Below was the turning sky, the constellations wheeling in fire and ice against a savage blackness, the chill glory of the Milky Way and the far green gleam of nebulae, hugeness, loneliness, and terror. The raw cold grandeur was like frost along the nerves; men felt sick

and dizzy with the streaming of the stars.

Faint light glimmered off spacesuits and weapons as the troop made its slow way over the hull. About half the band had come out through four exits, and they clustered together for comfort against the hollow dark. Few words were spoken, but the harsh rasp of their breathing rattled in the helmet radios.

As they approached the bows, Friday could pick out the stabbing brilliance of Alpha Centauri—but Sol was lost somewhere in the thronging stars, nearly three light-years away. He found it hard to believe that the ship was rushing through space at fantastic velocity—no, it was motionless, it was lost forever between the stars.

And in the face of that immensity and that mission, he thought bitterly, men had nothing better to do than fight each other. With all the universe around them, they could not unite in a society which did not tear itself apart.

There was a certain cruel symbolism in the fact that it was Astrogation which had betrayed him—the men who steered between the worlds, dealing in rottenness and death. But after all, what else did those officers have to do? There were no planets between the suns, no orbital corrections to make—the department existed to keep alive the techniques and, meanwhile, to hold various posts connected with the general maintenance of the ship. And to stir up against each other men who should have been comrades—to break the innocent with lies, to provoke mutiny by injustice and intrigue, to infiltrate the revolts they themselves had created and control them for some senseless unknown purpose.

His jaws hurt with the clenching of his teeth. There was work to be done: enter the arsenal from outside, get the weapons, overcome the guards, then go on to the park and fall on Wilson's men from behind so that the police could get out. Afterward it would be simple to clean up the rest of the mutineers; most likely they'd surrender at once when the police moved against them.

But after that—after that—!

EVAN FRIDAY walked slowly toward the door. It was strange to be back topside. After the noise and fury and belly-knotting terror of battle, after the lights had gone on again and folk had returned shakenly to resume life—of necessity, there had been amnesty for all rebels save the ringleaders—after the quite undeserved but pleasant adulation of gray and green and

Guild, there had been a polite note requesting his attendance on the Captain, and he had donned his shabby best and gone. And that was all there was to it.

He felt no special emotion, it was drained from him and only a great quiet steadiness of purpose was left. It was no use hating anyone, they were all together in the ship and the ship was alone between the stars. But there were certain words he had to say.

The policeman at the door saluted him. "This way, please, sir," he said.

So now it's "sir" again. Do they think that can bribe me?

They went down a short hall and through an anteroom. The clerks looked up from their work with a vague apprehensiveness. Friday nodded to a man he had known a half a year ago —half a lifetime!—and at his escort's gesture went alone through the inner door.

There were three men sitting at the great table in the Captain's office—frail white-haired Gomez, lean gray Farrell, stocky dark McMurtrie. They rose as he entered, and he stood with straining military stiffness. He couldn't help feeling naked without his uniform.

"How do you do, Ensign Friday." Gomez' old voice was hardly above a whisper. "Please be seated."

He found a chair and watched them out of cold eyes. "You are mistaken, sir," he answered. "I have no rank."

"Yes, you do, or rather you will as soon as that miscarriage of justice has been taken care of."

"Let us be plain with each other," said Friday flatly. "I know that you are responsible for my conviction. I also know that you and your associates engineered the mutiny, and that Wilson was only a force of which you made use. The casualties of the whole affair were some thirty killed and fifty wounded. If you had not summoned me here I would have come myself to charge you with murder."

There was pain in Gomez' slow reply: "And you would be perfectly justified. But perhaps the charge should be modified to manslaughter. We did not intend that there should be any death, and it weighs more heavily on us than you can imagine. But as you also know, the business got out of control, Wilson succeeded far beyond our expectations, and only your timely intervention saved us. Fortunately, the plan does not call for putting the ship into such danger again."

"I should hope not!" snapped Friday. "Before you go any further, perhaps I had better say that I left the traditional sealed envelope containing all I know with a friend. If I don't return soon, you may look for an unplanned uprising."

"Oh, you are in no danger," smiled Farrell. "It would hardly do for us to assault the next Captain."

"I—you—*what?*"

Numbly, Friday heard the voice continue: "In about five years, I imagine, you will be ready to succeed Captain Gomez."

He forced steadiness back, and there was a new anger in his reply: "Don't think you can buy me that way, or any other. The whole structure of ship society is wrong. Our history has been one succession of bunglings, injustices, and catastrophes. I am here to call for a complete overhauling. And the first item will be to clean out the rotten bloodsuckers who claim to be the leaders."

"Please, Mr. Friday," said McMurtrie, a little irritably. "Spare the emotional language till you've heard a bit more. For your information, every major wrong this expedition suffered has been created deliberately by the leaders—because they've really had no choice in the matter."

Friday glared at him. "You should know!" he spat. "You've run the whole dirty show, for twenty years this doddering fool has been your puppet, and—"

"I have not. The story goes, yes, that I am the power behind the throne. It's true that I've worked hard to keep things going. And I took the blame, because the Captain cannot afford it. He must have, if not the respect, at least the grudging acquiescence of the ship. But Captain Gomez is a very strong and skillful gentleman, and the decisive voice has always been his."

Friday shook his head. The maze of plot and counterplot, blinds and red herrings and interwoven cabals, was getting to be too much for him. "Why?" he asked dully. "What's the reason been? This is the greatest adventure man has ever faced, and now you say you've deliberately perverted it. If you aren't fiends and aren't madmen—*why?*"

"Let me start from the beginning," said Gomez.

He leaned back in his chair and half closed his eyes. "Psychology is a highly developed science these days," he said gently, "though for reasons which will become obvious it has been

largely suppressed aboard ship. A potential leader is quiety given some years of intensive training in the field, for use later on—as you will be given it. And among the thousands of men who worked ten or twenty years on Earth planning this voyage, there were many psychologists. They could foresee events with more precision than I can convey to you; but I hope my bare words will be convincing.

"Consider the *Pioneer*. Once on her way, she is a self-contained world. Everything we can possibly need to keep alive and comfortable is built into her. There is no weather, no disease, no crop failure, no earthquake, no outside invader, no new territory to explore, no new land to cultivate—nothing! A world potentially changeless! To be sure, for some twenty years the crew was still working on internal construction, but then that source of occupation and challenge was gone and there were still a hundred years or more of traveling left. A hundred years where a bare minimum of work would provide an excellent living for everyone.

"What is the crew going to do in those hundred years?"

For a moment Friday was taken aback at the question. The imbecile simplicity and the monstrous blindness of it held him dumb before he could answer: "Do? Why, God, man, the things that we have been doing, the worthwhile things that got accomplished in spite of all that went wrong. Science, music, the arts—"

McMurtrie gave him a scornful look. "What percentage of the population can keep amused that way?" he asked.

"Why—uh—ten per cent, maybe— But the rest— What's your psychology for, anyway? I've read books from Earth, I know there were primitive cultures where people were content to live perfectly uneventful, routine lives for thousands of years at a time. You could have created such a culture within the ship."

"And how fit would that culture be for the hardships and dangers of Alpha Centauri?" demanded Farrell.

"It's a question of decadence," said Gomez persuasively. "If you read your history, you'll find that the decadent cultures, the ones without hope or enterprise or anything but puerile experimentation hiding a rockbound conservatism, have been those which lacked some great external purpose. They've been easier to live in, yes, until the decadence went so far that disintegration set in. The cultures which offered a man something to live

for besides his own petty self—a crusade, a discovery, a dream of any kind, perhaps only the prospect of new land for settlement—have usually been violent, intolerant, unpleasant in one way or another, simply because everything else has been subordinated to the great purpose. I submit, as examples, Periclean Athens, Renaissance Italy, Elizabethan England, and nineteenth-century America, and ask you to compare them with, say, Imperial Rome or eighteenth-century Europe. You will also note that the greatest works of art and intellect were done in some of the most turbulent eras. As far as I can determine, the progress made aboard our ship has been rather because of than in spite of all our troubles."

"But damn it, man, we *have* a mission!" exploded Friday. "We're bound for far Centauri!"

"To be sure. That was the dream which sufficed the first generation. I don't say that unrest is a necessary component of non-decadence, in fact my whole argument has been grossly oversimplified. There was little strife in the beginning, because there was the great goal to dwarf men's petty differences.

"But what of the next generation, and the one after that, and the one after that, clear to Centauri? What was the goal to them but a vague thing in the background, an accepted part of everyday life—a thing which they would never see, or only see as very old people at best, a thing which had caused their lives to be spent in a cramped and sterile environment far from the green Earth? Don't you think there would have been a certain amount of subconscious resentment? And don't you think that the descendants of human stock deliberately chosen for energy, initiative, and general ability would have looked around for something worthwhile to do? And if nothing else is available, personal aggrandizement is a perfectly worthwhile goal."

"Couldn't—" Friday hesitated. The whole fiendish argument had a shattering conviction about it, and yet it seemed wrong and cruel. "Couldn't there have been a static culture for the in-between generations, and a revival of the dynamic sort in the generation that will reach Centauri young?"

"Now you're wallowing in wishful thinking," said McMurtrie. "Cultures have momentum. They don't change themselves overnight. Just tell me how you'd do all this, anyway."

Friday was silent.

"Believe me, all this was foreseen, and the solution adopted,

while admittedly not very good, was the best available," said Farrell earnestly. "Conflict was inevitable. But if it could be controlled, properly directed, it could have great value, not only in keeping the dynamic society we will need at Centauri going, but also as a hard school for the unknown difficulties we will face then.

"Naturally, overt control is impossible. It has to be done indirectly—as far as possible, events simply have to take their natural course, with such men as know the secret and the techniques of psychology serving only as unnoticed guides.

"The initial setup was designed to cause a certain chain of development. The original small-scale private enterprises became monopolies in a very natural way, and their excesses provoked reactions, and so it has been throughout the history of the ship. Now and then things have gotten out of control, such as during the great strike, or the recent riots and mutiny, but by and large the plan has progressed in its ordained path—the path which, believe it or not, in the long run has produced the *minimum* possible unrest and conflict.

"Some men have striven for their own selfish ends, money or power—Wilson was one. We need their type for the plan, we offer it chances to develop—and at the same time, through the ultimate annihilating defeat of such men, we weed the type out of our society. More men have responded in desirable ways. They have demanded justice for themselves, or for their class, or even—like yourself—for classes not their own, for the ship as a whole. Thus is born the type we ultimately want, the hard-headed fighting visionaries."

"A hell of a way to get them," said Friday disconsolately.

"The trouble with young idealists," said Gomez dryly, "is that they expect all mankind to live up to their own impossibly high standards. When the human race obstinately keeps on being human, these young men, instead of revising their goals downward to something perhaps attainable, usually turn sour on their whole species. But man isn't such a bad race, Friday. Give him a little time to evolve.

"As for you, I'd had my eye on you for a long time. You were able, intelligent, stubborn in your notions of right and wrong—all good qualities for a skipper if I do say so myself. You needed to be kicked out of a certain snobbishness and to learn practical politics. I arranged for you to be thrown into a milieu demanding such a devel-

opment. If you'd failed, you'd have been exonerated in time and given some harmless sinecure. As it is, you've responded so well that we think you're the best choice for the next Captain —the one who'll reach Centauri!"

Friday said nothing. There seemed nothing to say.

"You'll go back to lower decks for a while and lead the Guilds," resumed Gomez. "They have a good claim now for a voice on the Council, having saved the ship and discovered their own strength. They'll get it, after some difficulty and agitation. You'll be cleared of the charges against you and restored to officer class with a higher rank, but remain Guild spokesman. In the course of time, the Guilds will build up power and ultimately join with Astro to oust the other factions from an effective voice. No violence, if it can be helped, but a restoration of mercantile economy. By then you should have learned enough psychology, practical and theoretical, to take over the Captaincy from me—which will, among other things, allay the old and perfectly correct suspicion that Astro has been quietly running the whole show all these years.

"Without going into detail on every planned event, there will be conditions aboard which, while actually quite tolerable, will contain enough social evil of one sort or another to call forth the best efforts of all men of good will, whether they know the great secret or not. Yes, we'll give them their causes to fight for! And in the end their striving will succeed; the just and harmonious order of this voyage's beginnings will be restored.

"It will be difficult, yes, it will take most of your lifespan. But the job should be completed by the time the ship is within four or five years of her goal. Then a satisfied and united humanity can begin making ready for the next great adventure."

His voice trailed off, and he looked down at his desk with a blindness that spoke the continuing thought: *The adventure I will never see.*

"Are you game?" asked McMurtrie. "Do you want the job?"

"I—I'll take it," whispered Friday. "I'll try."

Gomez did not look up. It was as if he were seeing through the desk and the floor and the walls and corridors and hull, out to the loneliness between the stars.

The FIENDS in the BEDROOM

Press a switch and a room appears. With things *in it. . . .*

By JOHN JAKES

THE old platitude of "Any Port in a Storm" would have to be reworded, George Howell thought glumly. Now it would read "Any House in Quincy's Flat." He sat staring through the dust-covered windshield of his auto at their prospective home. He was a thin, sandy-haired young man. The sleeves of his white shirt were rolled up to the elbows and he was perspiring freely from the blazing desert sun.

Next to him sat Anne, his pretty brunette wife. Her appetizing lips were fixed in a small puckered "o" She too was staring out through the windshield at the plastic box squatting in the middle of the yellow dirt lawn. Beyond her, the real estate

agent, whose name was Wildhack Swain, jammed his bulk against the door, leaning half out the window as he puffed on his cigarette.

"Is that it?" George managed to say at last.

"That's it, buddy," Swain wheezed. He blinked twice. "Take it or leave it. I got a good business here, plenty of people on the waiting list. With the factory going great guns, people got to have a place to live. You understand that, buddy." He jabbed his cigarette in George's direction. Anne coughed and dodged backwards.

George opened the door and got out of the car. He was tired, tired of driving all the way from Massachusetts, tired of wondering what his new job in the lab would be. Just plain tired. But the house still didn't look too good. It was the only one for three blocks around.

Anne and Swain got out after him. George stood, hands on hips, peering up and down the unpaved dirt street. A tumbleweed went rolling lazily by before him. In the distance, the windows of the atomics factory threw back the sun in blinding flares of white.

"I wish you had something else," Anne said, scuffing her shoe in the dust. "One of your regular bungalows."

"Regular bungalows all rented up," Swain said snappily. "This one's the first of its kind in Quincy's Flat." He gestured expansively. "The extra-dimensional cottage. My God, folks, it's the newest thing. They got millions of them in California. That's where the inventor lived," he added confidentially.

"I read they had some trouble," George said with hesitation.

Swain threw up one hand. "Listen, buddy, W. W. Swain doesn't go in for faulty properties. This one's guaranteed, one hundred per cent failure proof. Come on inside and look for yourself."

He started up the lawn. Anne glanced uncertainly at George. "Well, I don't want to live in the tourist cabins," George said, swabbing his neck with a handkerchief.

"Tourist cabins are all filled up," Swain said over his shoulder. He kicked a scorpion off the concrete slab that served for a front porch and pulled the door open. "Step right in and look around."

George followed his wife into the house. Anne wasn't happy about the situation, he could tell. But then, neither was he. Quincy's Flat had boomed over night, and hundreds of bright young men with degrees in physics were

immigrating with their families. It was good pay, and a good chance for experience. If only they didn't have to depend on a place like this for their home . . .

There was one room, roughly twelve feet square, with plastic walls, floor and ceiling. It was unfurnished except for a metal cylinder that rose two feet from the floor. Swain stepped over to the cylinder and began pointing.

"This here switch, this turns the whole thing on. Then you just move this lever . . . this one here . . . along the dial. See, it's all marked. Kitchen, bathroom, bedroom. A neat little four-room cottage."

"In another dimension," Anne grumbled.

"Newest thing, newest thing," Swain put in quickly. "Want to see how it works?" He was grinning now, sweating, working hard at putting the deal across. He fingered the main switch teasingly. "How about it, folks?"

George looked at Anne. She was already staring at him. "Well?" he asked. "Shall we?"

She gave an unhappy little sigh. "Oh, I suppose so. I don't want to sleep out on the ground."

Swain let out a short happy laugh of triumph. He threw the main switch and the dial lit up. "Which room would you like to see first?"

"I don't care," George said.

"The kitchen," Anne said with finality.

Swain moved the lever. A humming whine sprang out of nowhere. It rose upward, and slowly, the rear wall began to grow misty. An arch began to take shape. The sound whined its way up the scale and the arch became solid. The mist vanished. There, beyond the arch and down three steps, was another room exactly like the one in which they stood.

"There she is," Swain said proudly. "Want to step in?"

Anne hesitated. "Aw, it won't hurt you," Swain said. "Safe as anything. Come on."

Reluctantly, Anne and George walked forward and through the arch. George felt a queer little shiver run through his body as he passed through, but that was all. The room was quite normal, except that the two windows were covered on the outside by something that appeared to be a piece of canvas painted to look like the desert at high noon.

"Can't you see past those things?" Anne asked, indicating the windows.

"Lady," Swain explained gently, "those windows look out into the other dimensions. You know, they aren't like Earth. The boy who put them up for me got a good look at what was out

there." Swain grinned feebly. A ripple of shivering went through his flesh. "It was pretty weird, so I hear."

"Hmmm." Anne had her finger to her chin. "Let's see the other rooms."

Obediently, George followed his wife and the real estate salesman back to the first room. Swain shut off the kitchen and turned on the bedroom and the bath in turn. Each was equipped with the canvas-backed windows. Other than that, they seemed quite normal, except that George got that same quiver each time he went through the arch.

"Well," Swain said when they had seen the rooms, "there it is, easy as pie to operate. When you want a room, turn it on. When you don't want it, it doesn't clutter up the joint. Stays out there in the other dimension. Want to rent it?"

He leaned forward, his eyes glowing.

Again George and his wife exchanged looks. He didn't care too much any more. He was tired, and he wanted a bed to lie in. They didn't have a bed with them, but at least having a roof over them would make him feel a little better. Anne deliberated with herself and at last she shook her head and said, "All right."

"How much is the rent?" George asked.

"One hundred a month, cash in advance."

George whistled. "Well, all right. Now about some furniture . . ."

Swain was already herding them out the door and down to the car. "Let's go right back down to the office," he said. "Got just what you need. Three hundred dollars for the complete outfit. Buy it and we'll have it out to you in a couple of hours. Come on down and we'll look it over."

George started the motor and they shot away from the queer box-like structure in a cloud of yellow dust. Once at the office, Swain showed them the furniture, and they bought it reluctantly. George handed over a four-hundred dollar check with some regret, but he felt a bit better now. By the time night came, they'd be on their way to being settled. At eight in the morning he'd report for work at the atomics factory.

"Thank you, buddy, and I know you'll be satisfied." Swain herded them once more toward his office door. "Have your furniture out right away. I'll get the boy loading it into the truck in jig time. Say . . ." He paused. "I guess I had better remind you. It'd be best if you didn't fool with those windows. Don't try to take off the canvas blinds and

get a peek into the other dimension. The boy that put them up for me did it . . ." Swain clucked his tongue and shook his head sadly.

George felt the sudden necessity to gulp. "What happened to him?"

"Poor boy, he looked out of those windows before he got them covered up, and they took him over to Meadeville the very next day."

"What's Meadeville?" Anne asked. The shadows of the office suddenly seemed chilly to George.

"State Asylum. The boy went odd in his head." Swain tapped his skull. "But there's nothin' to worry about if you don't mess with the blinds. And I'll have your furniture out to you in two shakes."

He stood in the doorway, blinking into the sun as George and Anne got into the car. They drove away down the yellow dirt street. George drove very, very slowly on the way home to their new house. And neither one of them said a word.

The red ball of the sun dropped slowly below the roof of the atomics factory. George stood on the porch, squinting, as the two crudely dressed furniture men climbed back into the truck. One of them lit a cigarette and started the motor with an angry growl. The other finished the dirty joke he had been telling, and the truck ground away down the gravel road, the last haw-haws of laughter floating in the dusty air behind it.

George stared around him. Three blocks away was the nearest house. A car was pulling into the drive down there, and two small children ran to greet the man who came out of the garage.

He could hear Anne in the kitchen, humming. The furniture from Wildhack Swain was cheap, but durable and pleasantly designed, every piece made from plastic, rugs and light bulbs included. George took off his shirt, started to go into the bedroom, and then pulled up short, frowning at himself for forgetting. He turned on the bedroom and left it on after depositing his shirt on top of the pile of suitcases.

"Well!" he said briskly as he stepped into the kitchen, "supper coming along?"

Anne turned, pulling two plates full of steaming food from the Jiffy Meal Box. She smiled, but George could see the tired sag of her shoulders. "It's all ready," she said, almost as if she had been through some great ordeal. George sat down and began to eat.

The meal, like the drive from Swain's, passed in silence. After supper, George walked around

nervously in the front room. No evening paper. Hmmm . . . he looked out the front window. Darkness. Desert darkness. Three blocks away, the lonely lights gleamed. Well, he thought to himself, might as well start unpacking.

He and Anne worked in the bedroom until ten thirty. Then they dialed the Jiffy Meal Box for two cans of beer and sat down in the front room, George in the plastic easy chair. Through the open door, they could hear the wind in the sand. They talked about the day's activities, and Anne managed to smile a little more. When she finished her beer, George turned on the bathroom and Anne went in to shampoo her hair.

George sat back down in the chair. It faced the bedroom door. He was staring vacantly into the bedroom, lost in thought, when he heard it. A scratching. A tapping. He swallowed. The breeze blew over him and chilled the sweat on his chest. He leaned forward in his chair. There it was again!

Quietly, so Anne would not hear him, he got up and walked into the bedroom. The sound was louder in here. He walked over to the window. The canvas blinds displayed their same vistas of noonday on the desert. George stopped, balancing himself lightly on tip-toes. He listened.

Out there! Something was out in the other dimension! Somethere, beyond the canvas window, thing . . . . *trying to get in!*

George whirled and dived for the bed. He ripped through the suitcase until he found what he was after. A .45 caliber automatic, left over from Germany and the war. He rummaged through the suitcase until he found the paper box, and then he jammed a clip of cartridges home. Shoving the gun into his belt, he ran back into the living room and jerked the lever on the cylinder. The bedroom shut itself off. The wall grew solid.

George's stomach was cold. Anne was humming to herself again in the bathroom. He heard the splash of the water, but he couldn't hear the strange tapping sound any more. The bedroom had gone back to its own dimension. George picked up one of the books they had brought with them from Massachusetts and tried to read. The equations blurred confusedly before his eyes.

Anne emerged from the bathroom, dressed in her blue nightgown, rubbing her head with a towel. She smelled cool and fresh as she bent over and kissed him. "I feel wonderful," she laughed. "Relaxed . . . and romantic." She kissed him again.

George shoved her away roughly. "No, Annie. Not tonight."

"George . . . what's wrong . . . why . . ." Then she saw the gun.

George made up an excuse about seeing a prowler outside the house. He could tell she didn't believe him, but he refused to say any more. She was a little angry, but he couldn't worry about that now. Brusquely, he pushed around her and went into the bathroom. He kept the gun on the wall shelf while he changed into his pajamas.

Anne had turned on the bedroom and was already putting sheets on the beds as he came out of the bathroom with the sharp stingingly sweet taste of toothpaste in his mouth. He locked the front door, and hefting the gun, walked into the bedroom. He listened for a moment. He could not hear the sound now.

"George, why are you carrying that gun?" Anne demanded.

"I told you."

"You're making me mad, George," she warned.

He took hold of her shoulder. "Look. Let's just go to bed and forget about it. Please. Please, Annie. Just trust me. Please." A note of frenzy edged his voice. Maybe it was imagination, he told himself. Or the wind. The wind can do funny things. Anyway, he'd be on the alert.

It took him ten minutes to pacify his wife, but finally she kissed him and hugged him and climbed into bed.

He must have dozed off. A shrill and terrible scream ripped up from nightmare depths in his mind and brought him plunging headlong into reality. He jerked his head in Anne's direction. A strange, bluish light surrounded her, and there was something long and sharp like an icicle sticking in her shoulder, and she was writhing back and forth on the bed, screaming.

George jumped out of bed. His eyes caught sight of something that looked like a hand, but was gray, globular, wet. His eyes traveled outward through the bluish light, along the pseudopod to the shape itself, vaguely human, large, trembling and gray, with two round yellow openings that glared like ovens in what must have been its head.

The thing pulled the weapon from Anne's flesh and the bluish light diminished a bit. Anne moaned, and George saw the blood running out of the wound. He staggered forward and felt something seize his free arm. He looked, and almost vomited.

A second organism was there, less than a foot from him, living, heaving its sloppy bulk, glaring balefully out of its yellow torch eyes. George cried out wildly and

brought his gun around and fired. He saw a piece of the gray jelly slough off and fly through the air and slap the wall with a moist sound. The thing snuffled.

"What . . . what are you . . ." George gasped. He wondered how long it would be before he went insane.

The answer did not come in sounds. It came in long, cool, terrible thoughts, like silver-daggers slipping into cracks in his brain. *We are from out there, from beyond the window. Your place has been forced into our world. We are not pleased with that forcing. We wish to suffer you, shriek you . . .*

The thoughts had queer alien turns. George stood there, panting, the two things heaving before him in the gloom. He looked toward the wall. The canvases on the windows were gone. One glimpse and he turned away, his head hurting. What he had seen had been frightening, mad, twisted, unworldly. He knew it would not be safe to look at it for long.

At this moment, came the thought, *at this moment, you . . .*

The thing with the icicle began to advance, dumbly, shuffling two masses of its body like legs, as the bluish light radiated from the sharp tip of the upraised weapon. George's eyes darted beyond the things to where a dim night light glowed in the living room. There . . . there, he had to get back to the world, get out of *this dimension,* get out . . . *before he was dead or babbling . . . and get Anne out . . .*

He fired again, and the thing stopped a moment. Then he reached down and picked up Anne, feeling the strain on his unused muscles. The things warned him with thoughts he could not understand. He turned. The road lay clear. *Over the bed, beyond the second thing, and into the living room . . .*

"Look," he thought, framing the words carefully in his mind, "let me go into the other room and I'll remove this place so it won't bother you again . . ."

A negation pulsed along the wires of his brain. The thing with the icicle lumbered forward. The bluish light played over Anne's pale face, and George felt suddenly full of wild animal hatred. *You disturb us,* came the thought, *we wish to suffer you . . .*

With a wild shriek, George leaped onto his bed, Anne over one shoulder, pumping the trigger of the gun with his free hand. The second creature sighed and shivered. George sheared the roundish globular mass on top free from the body with bullets. It rolled onto the bed and sat there like a gray pumpkin, its

yellow eyes flaring.

Wildly now, George pushed past the thing," feeling his hand sink a foot into the rancid matter. The thing snuffled and George fought frantically, pulling his hand free. The bluish light burned near him, and he felt something hot and freezing cold all in one graze his shoulder. He was not thinking now. He was acting by instinct.

He stumbled past the thing, and fell. Anne hit the top step and rolled . . . into the living room. George started to get up and felt something seize his outstretched foot. He rolled over. The thing with the icicle was over him, holding him, its smell making him sick.

George jerked the gun up and blasted a hole in one yellow eye. The eye collapsed like a wall of yellow cigarette ash. The thing let out a sound faintly like a howl and let go of him. George dragged himself into the front room, and from where he lay, he sent his one remaining bullet toward the cylinder. It blew the top off the machine and sent the wires and wheels spinning.

The house seemed to cry out, as if it was being wrenched somehow. Then it was quiet. George lay panting, feeling like he was going to be sick at any moment. At last he gathered enough courage to turn his head.

The wall was solid. The bedroom was gone. Forever, he thought, with the machinery wrecked. And the bathroom. Gone. And the kitchen too.

He crawled over to Anne. She was bleeding heavily, but she was alive. He touched his finger to the wound and looked at the blood gleaming brightly, redly, on the tip. He gaped at it, almost like a child. And then his mind began to work. George, it said, George, get up, get some help, *get some help . . .*

Fantastic images of what he had seen through the uncovered windows raced around in his head. He jammed his knuckles against his eyes. He couldn't wipe out the thoughts. They were there, so inhuman that he could not even faintly associate them with anything he knew.

George, his mind said doggedly, *get help, George.*

He walked feebly to the wall phone. It was over. Over now. Over. They were safe. He laughed out loud as he lifted the receiver. The laugh was more like a cackle of relief.

"What's that?" came the tinny voice of the operator, whining down the connection.

"Nothing," George breathed. He dropped his gun to the floor with a loud clank and leaned against the wall. "Get me a doctor . . ."

"We're Orneks," the pig said. "You're Gogos." And apparently, that explained everything.

THE ORNEKS and the GOGOS

By CHARLES E. FRITCH

THE rocket engines muttered an exclamation of relief as Captain Hawkins flipped the switch that gave them rest, and the spaceship glided on wings of steel across the shimmering Martian landscape.

The three men were staring, fascinated, at the vast expanse of red sand, splotched with yellowish green ferns, that slipped past beneath them.

"What do you suppose they'll look like," Stallman said. "The Martians, I mean."

Captain Hawkins shrugged. "Plenty of time to find out when we land." His hands were busy

pulling and pushing controls. "May not be any. Those ferns down there might very well be the only form of life."

"It'd be a pretty ferny planet, in that case," Bryant said.

Captain Hawkins groaned loudly. "Twenty million people on Earth I could have taken on this trip, and I had to choose you."

"I didn't know you cared, Cap," Bryant grinned. To Stallman, he said: "Martians there will be, if only because Cap here has no romance in his soul. They'll be about eight feet tall, have spindly bodies, and heads like ostrich eggs. All the science fiction magazines say so."

"I don't care what they look like," Stallman said, "as long as there are some."

"Will you two youngsters stop your infernal gabbing," Captain Hawkins said. "I want to concentrate on this."

"Sh," Bryant sh-ed. "The great man is at work." He leaned over the Captain's shoulder and peered into the viewscreen. "How about that spot right there?" he said, pointing. "It's as good as any."

"I know, I know," Captain Hawkins muttered gruffly. "Don't be a back seat driver. I've got eyes."

"Hang onto your hats, boys," Stallman advised. "Here we go."

Bryant cried enthusiastically, "Tim-m-m-mber!"

The ground came rushing up to fill the viewscreen, and they touched Mars. Bounced. Touched. Bounced. And finally settled in a cloud of dust.

"Well," Captain Hawkins said proudly.

"Pretty sloppy," Bryant said, contemplating his fingernails. "A person'd think you've never landed on Mars before."

Captain Hawkins glared at him.

"Uh—we'd better check to see if anything got damaged," Stallman suggested hastily.

"Mmm," Captain Hawkins said.

For the next several minutes, they rummaged around, and everything appeared to be intact. Suddenly from the porthole Bryant let out a gasp that sounded explosive in the narrow confines of the spaceship's control room.

"Pigs," he said. His voice was high-pitched and incredulous, and on his face was a look of intense bewilderment.

"What!" Captain Hawkins and Stallman joined him, crowding to see through the small opening.

"Pigs," Bryant repeated weakly, not certain that he believed it himself. He pointed a limp finger towards the quartz window.

"You're kidding!"

"Don't be silly. I know a pig when I see one. Pigs is pigs. Look for yourself."

Captain Hawkins looked for himself. He frowned. "Let me have the glasses."

Stallman took a pair of field glasses from a drawer and reluctantly handed them over.

"I don't know what I expected to see first on Mars," Bryant complained, "but it certainly wasn't pigs."

"Maybe other forms of life are similar," Stallman suggested eagerly. "Maybe life on the planet was parallel to ours. Maybe even the natives—"

"Pigs, hell!" Captain Hawkins said, lowering the field glasses. "They're walking upright, on their hind feet. Those are Martians!"

"Let me look," Stallman begged, but Bryant grabbed the glasses and held them to his eyes.

After a while, Bryant said sadly, "I was afraid of this. After all those grandiose stories of the great civilizations on Mars, this has to happen." He moaned and gazed through the window. "They still look like pigs, though, except—the one on the left's wearing glasses!"

"A near-sighted pig," observed Stallman, with interest. "Let me look."

"And the other," said Captain Hawkins triumphantly; "notice anything different?"

"For gosh sakes!"

The hand holding the field glasses drooped, and Stallman seized his opportunity to confiscate them.

He completed the statement: "It's carrying an umbrella!" He looked up, a little startled by his own statement. "A pig with an umbrella? That's crazy."

"A Martian with an umbrella," Captain Hawkins corrected impatiently. "So they look like pigs. So what."

"So what?" Bryant grimaced, for his romantic nature was highly disturbed by the discovery. He had hoped for beings superhuman in both physique and intellect, something on the order of Greek gods, and disappointment showed in every corner of his face.

"Ants, hippopotami, anything," he lamented, "but why—pigs?"

"Why not?" Captain Hawkins wanted to know. "When we started on this little jaunt to Mars we realized that if Mars was inhabited at all, it might be with people who wouldn't win any beauty contests on Earth. People who might, in fact, resemble an Earth animal of some kind."

"Like pigs, for instance," Stallman sighed.

"Like pigs, for instance," Captain Hawkins agreed.

Martians or not, Bryant told himself, the two individuals coming across the red sand did look as much like pigs as anything, including pigs, could. Put them on Earth, minus the glasses and umbrella, and they'd wind up on a blue plate special faster than either could say, "Don't stick that fork in me; I'm a Martian." The thought failed, however, to still the romantic rumblings in Bryant's soul, for he was still hoping the Captain was wrong; hoping that perhaps the pig-creatures were merely a form aside from the more human inhabitants, perhaps in themselves intelligent, but definitely a minor form of life.

"This trip may turn me into a vegetarian," he groaned.

When the Martians were within ten feet of the spaceship, they stopped and stared. They had been talking and gesturing with much enthusiasm and did not notice the rocket until they were almost upon it.

The one with the glasses carefully adjusted the lenses upon his pink-colored snout and cautiously came closer. The one with the umbrella followed him. They walked completely about the ship. The one with the umbrella experimentally tapped it and seemed pleased with the metallic response. The one with glasses peered through the quartz window.

"Now what?" Bryant wondered. "We can't just make faces at each other through the porthole." He felt an urge to stick out his tongue at the fat, piggish face hovering a few inches away, just to see what the other's reaction would be.

"Let's go out," the Captain suggested. To Stallman: "How's the air?"

Stallman consulted gauges. "Thin and cold. But breathable, if we take it easy."

"One of us better stay in here. Stallman?"

"Yeah," the man grumbled assent.

"Bryant and I'll go out. If one of us hasn't reported back in four hours, take off. Got that?"

Stallman showed his disappointment in a grimace, but he said, "Right."

"Expecting trouble, Cap?" Bryant asked.

Captain Hawkins shook his head. "Just preparing for it."

The two men put on wool clothing, strapped pistols to their hips, and went through the airlock. The outer door opened, and the air grew cold and thin around them, turning their breaths to white vapor.

Bryant blinked, his eyes moist and smarting from the sudden

chill and the sight of an endless expanse of red sand, punctuated at intervals with the sickly-green vegetation. There was an alien taint to the air which Bryant decided with a naive instinct was not chemical. He shivered.

"What happened to our friends?" he wondered.

Captain Hawkins pointed. "There they go. Must have lost interest." He yelled, and his voice made white streaks in the cold air. He yelled: "Hey. Hey, there!"

The two Martians were continuing their walk, apparently unconcerned over their discovery of an alien space ship. They had been gesturing determinedly, but at the sound of the Earthman's voice they turned, startled, their mouths hanging open.

"Hey, there!" Captain Hawkins shouted again, and waved his arms.

The Martians paused, shrugged their round pink shoulders, and waddled back to the space ship on thick pink haunches that ended in hoofs. Bryant watched them with ill-concealed displeasure, wondering if they oinked.

Captain Hawkins smiled and extended his hand. "We're Earthmen," he said proudly. "We just landed."

The Martians looked like a vaudeville team with stage fright. The one with the umbrella fidgeted, while the other adjusted his glasses and stared vacuously at the hand.

"Er—nice day for a walk," the eyeglassed one observed in a high-pitched, piggish voice.

"And they speak English yet," Bryant moaned. "Oh, no!"

Captain Hawkins' jaw sagged.

The one with the glasses turned to the one with the umbrella. "I wonder—"

The other shrugged.

"We've been alone out here a long time, away from the city. Do you suppose—?"

The other nodded to concede the unvoiced possibility.

Captain Hawkins, recovering from his astonishment, tapped the eyeglassed Martian on a pink shoulder and gazed determinedly into the thick lenses perched on its snout.

"You don't seem to understand," he said with a strained patience. "We're Earthmen. From Earth. The third planet."

He pointed into the sky, and the two Martians gazed upward and seeing nothing unusual, shrugged nervously.

Bryant stepped forward, a determined look on his face. "I haven't played charades in years," he said, "but here goes."

He squatted and drew pictures in the sand with his finger, and at various times he pointed to himself and Captain Hawkins

and to the Martians and to the rocket ship, punctuating his gestures with attempts at pidgin English. After awhile, he got up, wiping a thin layer of cold sweat from his brow.

"There," he said, "now do you understand?"

The Martian with the glasses carefully scrutinized Bryant's face. "Incredible," he said.

"I hope he means my explanation," Bryant said, "and not my face."

"It's not, really," Captain Hawkins was saying modestly. "Just another engineering triumph is all."

"Incredible," the Martian repeated.

"Yes," agreed the one with the umbrella.

"Let them have it their way," Bryant muttered, a trifle disgusted. "This is a hell of a reception for visitors."

"Their customs are just different," the Captain defended.

His nose was quivering oddly from the cold, and Bryant turned away to keep from laughing. "Yeah, well I still say pigs is pigs, even if they're Martians."

"Gogos?" asked the Martian with the umbrella. "Visitors from another planet?"

"That's what I was thinking" answered the other. "I've heard—"

The Martians began whispering excitedly together, pausing now and then to look over their shoulders at the two Earthmen. An occasional "incredible" drifted from the huddle.

The Martian with the eyeglasses had turned and was bowing.

"Gentlemen, welcome to Mars," he said.

"Well," Bryant said, grinning happily, "this is more like it." He was too pleased with the arrival of his long-awaited recognition to laugh at the ludicrous figure of a pig, with glasses, bowing and talking like something out of a comic strip.

"What a way to talk," the Martian with the umbrella said, sulking.

The eyeglassed Martian poked him to be quiet. "My name is Overwood." He jerked a hoof over his shoulder. "This other is Bender. We're farmers."

Captain Hawkins introduced himself and Bryant. "What I can't understand," he said, "is, how can you speak our language?"

"Strange," Overwood said, "I was about to ask *you* how you could speak *ours!* Incredible, isn't it?"

"Yeah," Bryant said wryly. "Incredible."

"A fine way for an Ornek to talk to a Gogo," Bender sulked, giving his head a disturbed toss

and jabbing at the sand with his umbrella.

"What are these Orneks and Gogos?" Captain Hawkins asked.

"We are Orneks," Overwood announced proudly, "and the Gogos, well they're something else again."

"Foreigners?" suggested Captain Hawkins.

"Something like that." He leaned forward confidentially. "Don't pay any attention to Bender. He's mad because I proved conclusively to him today that exactly four thousand, eight hundred fifty-one schmoogelbrubs can dance on the head of a pin."

"What in the devil are—" Bryant began. "Oh, never mind." He kicked the sand absentmindedly. "What I want to know is, are we going to stand here all day talking about schmoogelwhatchamacallits? I'm getting hungry."

"Forgive me," Overwood apologized. "We'd love to have you for dinner. Wouldn't we, Bender?"

"Well—"

"Our house is just over the dune there," Overwood continued hastily. "It's not much, way out here in the country, away from city conveniences, but at least we can talk more comfortably there."

"Okay," Captain Hawkins said. "Lead on."

The Martians did, and the Earthmen trailed behind. Bryant's nose, cold at first, began to twitch, but he made an effort to control it.

"At last we're getting somewhere," Bryant said, a little more satisfied with the way things were progressing. "You know, Cap, I just thought of something. This language business. Maybe some others from Earth made attempts at Mars, and maybe some of them got here and were stranded. That's one way the Orneks might have learned English."

CAPTAIN Hawkins grunted.

"After all," Bryant continued, proud of his reasoning, "they've got a name for us, so they must have encountered others." He rolled the name over on his tongue, tasting the sound. "Gogos. What did you say?"

Hawkins shook his head and mumbled something unintelligible.

"Oh," Bryant said, deciding it was of no importance.

The pig-like Martians waddled ahead of them, whispering together, until they got to their house, a perfect square made of some hard, chalk-colored material.

Bryant wondered why there were no other Martians around, and then he remembered. These

two were farmers. He wondered what they raised.

They paused at the doorway, and Bryant strained his eyes to see across the red sand. He pointed curiously.

"What's that?"

They looked. Several hundred yards away was a corral or pen in which several light colored animals moved about. Neither of the Earthmen could tell what Earth species they resembled, for the animals were too far away.

Overwood looked nervously at them and answered: "Those are only—er—our livestock. Let's go in."

"Wait a minute," Bryant said. Loose facts in his mind tried desperately to combine. Something Bender had said before. "I'd like to go over and have a look at them," he said finally.

He shook his head; suddenly it felt cobwebby. Overwood and Bender exchanged knowing glances. Their pig-like faces were almost expressionless, but Bryant could have sworn they were grinning at him. He didn't like it.

"Coming, Cap?"

Captain Hawkins grunted helplessly, his gaze disturbed.

"Okay, okay," Bryant said. "Hold down the fort. I'll be right back anyway."

He turned and walked away, the red sand feeling soft and crunchy and comfortable beneath his feet. He felt a sudden desire to kick off his boots and romp through the sand on all fours. He controlled himself, however, and wondered a little nervously at the impulse. He was aware that his mind wasn't as clear as it might have been, as though he had been drinking some strange alien beverage for the first time.

Something was wrong somewhere; he knew that, and he had the strangely unpleasant sensation of not giving a particular damn whether it was or not. It was an indifference that surprised him, for usually he took sides, feeling either one way or the other about a thing. He was a little ashamed, too, of this lazy animal contentment that crept over him, and of its alien, numbing philosophy that all was right in a world in which all was obviously not right.

Helplessly, he kicked at the sand, sending a red spray into the air before him. His nose twitched.

Bryant wasn't surprised; he knew, somehow, before he ever got to the pen that the animals would be human beings, or reasonable facsimiles thereof, and he was not disappointed, although a remote part of him wished that he had been. There were about ten of them, male and female, stark naked, running

about the enclosure on all fours, muttering and grunting. And for some idiotic reason, it seemed the most natural thing in the world to Bryant that it should have been this way.

"Hello," he said, aloud.

No, that wasn't what he said. He tried to, but it was something else. What? He didn't know. The problem tortured his peace-seeking mind, and he fought to resolve it. Something was wrong, dreadfully wrong. Something was happening to him that shouldn't.

No, that was not it; that was not it at all. There was nothing wrong. Nothing at all. This was it. The status quo. The status Gogo. Things were as they should be. Yes, that was it; there was really no problem at all. Bryant's nose quivered at the smell of his kin. Gogos, he thought. These were the Gogos.

They looked up suspiciously as he approached. There was a blonde female, very well-formed, who looked at him with animal interest; but the others regarded him with a mixture of uncertainty and apprehension. A large, shaggy male with coal-black eyes roughly shoved the female aside and placed himself before her. Bryant resented the intrusion, and he sat on his haunches and regarded the Gogo with unconcealed hostility.

There was something he had to do, though; now, what was it? It had something to do with that house back there. He turned away, grunting over his shoulder to let the others know he would return, and headed back toward the house, trotting on all fours.

To his left was the glinting top of a spaceship just visible beyond a red dune. In one thought he wondered what it was and in the next decided it could be of no consequence. Stallman, he thought as he saw it. He frowned. Now what did that mean?

It occurred to Bryant suddenly that he should be walking erect, on his hind legs. The thought startled him, for it was foolish. Why should he want to do that? On impulse he tried it and found the position uncomfortable to bear and impossible to maintain. He was startled at the weird thoughts he had and ashamed that he gave in to them.

The odor of food met him at the door, and his animal nostrils quivered hungrily. The odd taint he had noticed in the thin, cold air had disappeared and was forgotten.

"Look who's here," Bender said pleasantly.

Bryant couldn't understand the language, but he grunted amiably.

Overwood came over and

scratched Bryant's ear. It felt good.

"After dinner, we can put him with the others," the Martian said.

Bryant murmured drowsily, happy in the attention being lavished upon him.

"You almost gave the thing away," Overwood said, annoyed. "You and your talk about Gogos."

"Well, I don't like it," Bender muttered. "I don't like this familiarity with such creatures." His tone was full of disgust.

"It's something in the air," Overwood said tolerantly. "Something like an evolution with built-in safeguards to insure the supremacy of our species." He fell to musing. "They seemed to be almost rational creatures at first, just as were the first group that arrived generations ago. But then—well, here's an example of what happened." He indicated Bryant and then turned to thoughts more pleasant. "How's the meal coming?"

"I'm getting it ready," Bender said. "Be patient."

"It should be a tasty morsel," Overwood anticipated. "I can hardly wait."

Bryant curled up in the sunlight streaming through the doorway and felt content, even as a dog or cat on Earth must feel content because of its remoteness from the cares and worries of the world. He yawned disinterestedly at the stretch of sand in front of him and the silver rocket ship that lay beyond it.

He raised his head a bit more, curiously, as he saw someone coming over the dune. Unaccountably, his heart raced. Stallman, he thought desperately; it's Stallman coming to rescue me.

Stallman? he thought immediately afterward: what was that? The creature was only another Gogo, like him. No, that was not quite right. It only looked like a Gogo. It was standing on its hind feet, of all things, and had a long flexible nose that curved under one foreleg to a metal tank strapped to its back. Under the other foreleg it carried two extra noses attached to tanks.

At the sight of this strange creature, Bryant felt both glad and afraid, and the opposing emotions fought within him. He cried out excitedly, and the two Martians came swiftly to the door.

"Another one," Overwood said, sighing; he was more annoyed than frightened or angry. "I thought there were only two."

"We can take care of him," Bender said confidently.

"It's just the inconvenience,"

Overwood complained. "Give him a light blast; we don't want him killed."

Bender nodded and took his umbrella from a corner and pointed it at the approaching Stallman. This was not right, Bryant told himself; not right at all. He leaped up suddenly and threw himself against the Martian.

The sand in front of Stallman exploded. The Earthman fell to the ground, rolled over, and then leaped up, gun in hand, and started running toward the house.

Bender steadied himself for another shot. "Take care of that animal," he said quietly.

Bryant lay on the floor and watched Stallman racing across the sand, still carrying the two tanks under one arm. The Earthman waved the gun and fired it once. The bullet bounced harmlessly from the outside wall.

As the man came closer, Bryant felt afraid, and he wondered why he had deliberately spoiled the aim of the fat, pink one who was defending him. Perhaps he felt a kinship with the stranger who resembled him. He didn't know. He didn't know either which side to be on, and as he was trying to decide, there was a blast, and Stallman staggered a few steps and pitched headlong into the sand a few yards from the door. The gun and an oxygen tank hurtled forward and struck the floor with clanking sounds.

"I'd better start the main course going," Bender said, turning to the kitchen.

"It's a nice day for a picnic," Overwood observed. "We really should have made some sandwiches."

Curious, Bryant crept cautiously forward to see what the metal objects were which had been thrown into the room by the force of Stallman's fall. He sniffed at the gun, ran his tongue across it, and decided it was inedible, or at least bad tasting. The tank was a few feet away, trailing a pleated length of hose. Bryant regarded it with curiosity, and smelled about it. The tank itself was smell-less, but a strange odor was seeping from the end of the hose. Bryant sniffed it, shook his head, sniffed it some more, and then sneezed violently.

Now what the devil, Bryant wondered suddenly, was he doing down on all fours. He looked up into the amused pig face of Overwood, and unpleasant memories came. He leaped up and hit the Martian in the stomach. The skin felt soft and flabby, and his fist became buried in rolls of fat. The Martian grunted, like a pig, and collapsed.

"What's that?" Bender wanted to know.

He came into the room, looked frightened for a moment, and then fell to the floor. His head had made a sharp cracking noise against the umbrella weapon in Bryant's hands.

AN HOUR later, the rocket ship was murmuring high above the atmosphere of Mars, as Bryant, Stallman, and Captain Hawkins compared notes.

". . . and so," Bryant was finishing, "after I got a whiff of that clear oxygen, things cleared up. Just in time, too."

"I made a few tests after you two left the ship," Stallman said. "Nothing much else to do. I tried the atmosphere on a couple of white rats from the lab and they acted sort of peculiar. That's why I brought out the oxygen."

"What about those Gogos?" Captain Hawkins wanted to know. "You say they're human?"

"Well, nearest I can figure, they must be descendants of space travelers who made it to Mars years ago, and never got back because of this 'evolution safeguard.' That's probably how the Orneks learned the language. After I dragged you two invalids into the ship, I went back and rounded up four of the more friendly Gogos. They're down in the hold. I had to throw out some stuff to make room, but nothing essential. We'll make it okay."

Bryant grinned. "She's one of them. They're probably second or third generation at least, so we'll have to re-educate them with more than a sniff of oxygen."

"Maybe on successive trips we can get more," Captain Hawkins suggested. "What I can't figure out, though," he continued bewilderedly, "is what happened to me. When I went into that house, I just got woozier and woozier, and then, pft! nothing —until I woke up in the ship here."

"Yeah, what did happen to him?" Stallman asked.

Bryant hesitated. He recalled how he had discovered Captain Hawkins, unconscious and naked, crowded into a large pan being readied for the oven; he'd had a look of sublime contentment on his face and an apple in his mouth.

"Nothing," Bryant said finally. "Nothing at all. In fact, he had an easier time than either of us."

After all, there was no sense in all of them becoming vegetarians.

The GREAT C.

Every year they sent a man to the Great C with three questions. No man had yet come back. Now it was Meredith's turn. . . .

By PHILIP K. DICK

HE WAS not told the questions until just before it was time to leave. Walter Kent drew him aside from the others. Putting his hands on Meredith's shoulders, he looked intently into his face.

"Remember that no one has ever come back. If you come back you'll be the first. The first in fifty years."

Tim Meredith nodded, nervous and embarrassed, but grateful for Kent's words. After all, Kent was the Tribe Leader, an impressive old man with iron-gray hair and beard. There was a patch over his right eye, and he carried two knives at his belt, instead of the usual one. And it was said he had knowledge of letters.

"The trip itself takes not much over a day. We're giving you a pistol. There are bullets, but no one knows how many of them are good. You have your food?"

Meredith fumbled in his pack. He brought out a metal can with a key attached. "This should be enough," he said, turning the can over.

"And water?"

Meredith rattled his canteen.

"Good." Kent studied the young man. Meredith was dressed in leather boots, a hide coat, and leggings. His head was protected by a rusty metal helmet. Around his neck binoculars hung from a rawhide cord. Kent touched the heavy gloves that covered Meredith's hands. "That's the last pair of those," he said. "We won't see anything like them again."

"Shall I leave them behind?"

"We'll hope they—and you—come back." Kent took him by the arm and moved even farther away, so that no one would hear. The rest of the tribe, the men and women and children, stood silently together at the lip of the Shelter, watching. The Shelter was concrete, reinforced by poles that had been cut from time to time. Once, in the remote past, a network of leaves and branches had been suspended over the lip, but that had all rotted away as the wires corroded and broke. Anyhow, there was nothing in the sky these days to notice a small circle of concrete, the entrance to the vast underground chambers in which the tribe lived.

"Now," Kent said. "The three questions." He leaned close to Meredith. "You have a good memory?"

"Yes," Meredith said.

"How many books have you committed to memory?"

"I've only had six books read to me," Meredith murmured. "But I know them all."

"That's enough. All right, listen. We've been a whole year deciding on these questions. Unfortunately we can ask only three, so we've chosen carefully." And, so saying, he whispered the questions into Meredith's ear.

There was silence afterward. Meredith thought over the questions, turning them around in his mind. "Do you think the Great C will be able to answer them?" he said at last.

"I don't know. They're difficult questions."

Meredith nodded. "They are. Let's pray."

Kent slapped him on the shoulder. "All right, then. You're ready to go. If everything goes right, you'll be back here in two days. We'll be watching for you. Good luck, boy."

"Thanks," Meredith said. He

walked slowly back to the others. Bill Gustavson handed him the pistol without a word, his eyes gleaming with emotion.

"A compass," John Page said, stepping away from his woman. He handed a small military compass to Meredith. His woman, a young brunette captured from a neighboring tribe, smiled encouragingly at him.

"Tim!"

Meredith turned. Anne Fry was running toward him. He reached out, taking hold of her hands. "I'll be all right," he said. "Don't worry."

"Tim." She looked up at him wildly. "Tim, you be careful. Will you?"

"Of course." He grinned, running his hand awkwardly through her thick short hair. "I'll come back." But in his heart there was a coldness, a block of hardening ice. The chill of death. He pulled suddenly away from her. "Good-bye," he said to all of them.

The tribe turned and walked away. He was alone. There was nothing to do but go. He ran over the three questions once more. Why had they picked him? But someone had to go and ask. He moved toward the edge of the clearing.

"Good-bye," Kent shouted, standing with his sons.

Meredith waved. A moment later he plunged into the forest, his hand on his knife, the compass clutched tightly to him.

HE WALKED steadily, swinging the knife from side to side, cutting creepers and branches that got in his way. Occasionally huge insects scurried in the grass ahead of him. Once he saw a purple beetle, almost as large as his fist. Had there been such things before the Smash? Probably not. One of the books he had learned was about lifeforms in the world, before the Smash. He could not remember anything about large insects. Animals were kept in herds and killed regularly, he recalled. No one hunted or trapped.

That night he camped on a slab of concrete, the foundation of a building that no longer existed. Twice he awoke, hearing things moving nearby, but nothing approached him, and when the sun appeared again he was unharmed. He opened his ration tin and ate from it. Then he gathered up his things and went on. Toward the middle of the day the counter at his waist began to tick ominously. He stopped, breathing deeply and considering.

He was getting near the ruins, all right. From now on he could expect radiation pools continually. He patted the counter.

It was a good thing to have. Presently he advanced a short distance, walking carefully. The ticking died; he had passed the pool. He went up a slope, cutting his way through the creepers. A horde of butterflies rose up in his face and he slashed at them. He came to the top and stood, raising the binoculars to his eyes.

Far off, there was a splash of black in the center of the endless expanse of green. A burned-out place. A great swath of ruined land, fused metal and concrete. He caught his breath. This was the ruins; he was getting close. For the first time in his life he was actually seeing the remains of a city, the pillars and rubble that had once been buildings and streets.

A wild thought leaped through his mind. He could hide, not go on! He could lie in the bushes and wait. Then, when everyone thought he was dead, when the tribe scouts had gone back, he could slip north, past them, beyond and away.

North. There was another tribe there, a large tribe. With them he would be safe. There was no way they could find him, and anyhow, the northern tribe had bombs and bacteriaspheres. If he could get to them—

No. He took a deep shuddering breath. It was wrong. He had been *sent* on this trip. Each year a youth went, as he was going now, with three carefully-planned questions. Difficult questions. Questions that no man knew answers for. He ran the questions over in his mind. Would the Great C be able to answer them? All three of them? It was said the Great C knew everything. For a century it had answered questions, within its vast ruined house. If he did not go, if no youth were sent— He shuddered. It would make a second Smash, like the one before. It had done it once: it could do it again. He had no choice but to go on.

Meredith lowered his binoculars. He set off, down the side of the slope. A rat ran by him, a huge gray rat. He drew his knife quickly, but the rat went on. Rats—they were bad. They carried the germs.

Half an hour later his counter clicked again, this time with wild frenzy. He retreated. A pit of ruins yawned ahead, a bomb crater, not yet overgrown. It would be better to go around it. He circled off to one side, moving slowly, warily. Once the counter clicked, but that was all. A fast burst, like bullets flying. Then silence. He was safe.

Later in the day he ate more of his rations and sipped water from the canteen. It would not be long. Before nightfall he

would be there. He would go down the ruined streets, toward the sprawling mass of stone and columns that was *its* house. He would mount the steps. It had been described to him many times. Each stone was carefully listed on the map back at the Shelter. He knew by heart the street that led there, to the house. He knew how the great doors lay on their faces, broken and split. He knew how the dark, empty corridors would look inside. He would pass into the vast chamber, the dark room of bats and spiders and echoing sounds. And there it would be. The Great C. Waiting silently, waiting to hear the questions. Three—just three. It would hear them. Then it would ponder, consider. Inside, it would whirr and flash. Parts, rods, switches and coils would move. Relays would open and shut.

Would it know the answers?

He went on. Far ahead, beyond miles of tangled forest land, the outline of the ruins grew.

THE sun was beginning to set as he climbed the side of a hill of boulders and looked down at what had once been a city. He took his belt-light and snapped it on. The light dimmed and wavered; the little cells inside were almost gone. But he could see the ruined streets and heaps of rubble. The remains of a city in which his grandfather had lived.

He climbed down the boulders and dropped with a thud onto the street. His counter clicked angrily, but he ignored it. There was no other entrance. This was the only way. On the other side a wall of slag cut off everything. He walked slowly, breathing deeply. In the twilight gloom a few birds perched on the stones, and once in a while a lizard slithered off, disappearing into a crack. There was life here, of a sort. Birds and lizards that had adapted themselves to crawling among the bones and remains of buildings. But nothing else came this way, no tribes, no large animals. Most life, even the wild dogs, stayed away from this kind of place. And he could see why.

On he went, flashing his feeble light from side to side. He skirted a gaping hole, part of an underground shelter. Ruined guns stuck up starkly on each side of him, their barrels bent and warped. He had never fired a gun, himself. Their tribe had very few metal weapons. They depended mostly on what they could make, spears and darts. Bows and arrows. Stone clubs.

A colossus rose up before him. The remains of an enormous building. He flashed his light up,

but the beam did not carry far enough for him to make it out. Was this the house? No. It was farther. He went on, stepping over what had once been a street barricade, slats of metal, bags of spilled sand, barbed wire.

A moment later he came to it.

He stopped, his hands on his hips, staring up the concrete steps at the black cavity that was the door. He was there. In a moment there would be no turning back. If he went on now, he would be committed. He would have made his decision as soon as his boots touched the steps. It was only a short distance beyond the gaping door, down a winding corridor, in the center of the building.

For a long time Meredith stood, deep in thought, rubbing his black beard. What should he do? Should he run, turn and go back the way he had come? He could shoot enough animals with his gun to stay alive. Then north—

No. They were counting on him to ask the three questions. If he did not, then someone else would have to come later on. There was no turning back. The decision had already been made. It had been made when he had been chosen. Now it was far too late.

He started up the rubbled steps, flashing his light ahead. At the entrance he stopped. Above him were some words, cut in the concrete. He knew a few letters, himself. Could he make these out? Slowly, he spelled.

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The words meant nothing to him. Except, perhaps, the word "federal." He had heard it before, but he could not place it. He shrugged. It did not matter. He went on.

It took only a few minutes to negotiate the corridors. Once, he turned right by mistake and found himself in a sagging courtyard, littered with stones and wiring, overgrown with dark, sticky weeds. But after that he went correctly, touching the wall with his hand to keep from making a wrong turn. Occasionally his counter ticked, but he ignored it. At last a rush of dry, fetid air blew up in his face and the concrete wall beside him abruptly ended. He was there. He flashed his light around him. Ahead was an aperture, an archway. This was it. He looked up. More words, this time on a metal plate bolted to the concrete.

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He smiled. Words, signs. Letters. All gone, all forgotten. He

went on, passing through the arch. More air blew around him, rushing past him. A startled bat flapped past. By the ring of his boots he knew that the chamber was huge, larger than he had imagined. He stumbled over something and stopped quickly, flashing his light.

At first he could not make out what they were. The chamber was filled with things, rows of things, upright, crumbling, hundreds of them. He stood, frowning and puzzling. What were they? Idols? Statues? Then he understood. They were things to sit on. Rows of chairs, rotting away, breaking into bits. He kicked at one and it fell into a heap, dust rising in a cloud, dispersing into the darkness. He laughed out loud.

"Who is there?" a voice came.

He froze. His mouth opened, but no sound came. Sweat rose on his skin, tiny drops of icy sweat. He swallowed, rubbing his lips with stiff fingers.

"Who is there?" the voice came again, a metallic voice, hard and penetrating, without warmth to it. An emotionless voice. A voice of steel and brass. Relays and switches.

The Great C!

He was afraid, more afraid than ever in his life. His body was shaking terribly. Awkwardly, he moved down the aisle, past the ruined seats, flashing his light ahead.

A bank of lights glimmered, far ahead, above him. There was a whirr. The Great C was coming to life, aware of him, rousing itself from its lethargy. More lights winked into life, more sounds of switches and relays.

"Who are you?" it said.

"I—I've come with questions." Meredith stumbled forward, toward the bank of lights. He struck a metal rail and reeled back, trying to regain his balance. "Three questions. I must ask you."

There was silence.

"Yes," the Great C said finally. "It is time for the questions again. You have prepared them for me?"

"Yes. They are very difficult. I don't think that you will find them easy. Maybe you won't be able to answer them. We—"

"I will answer. I have always answered. Come up closer."

Meredith moved down the aisle, avoiding the rail.

"Yes, I will know. You think they will be difficult. You people have no conception of the questions put to me in times past. Before the Smash I answered questions that you could not even conceive. I answered questions that took days of calculating. It would have taken men months to

find the same answers on their own."

Meredith began to pluck up some courage. "Is it true," he said, "that men came from all over the world to ask you questions?"

"Yes. Scientists from everywhere asked me things, and I answered them. There was nothing I didn't know."

"How—how did you come into existence?"

"Is that one of your three questions?"

"No." Meredith shooks his head quickly. "No, of course not."

"Come nearer," the Great C said. "I can't make your form out. You are from the tribe just beyond the city?"

"Yes."

"How many are there of you?"

"Several hundred."

"You're growing."

"There are more children all the time." Meredith swelled a little, with pride. "I, myself, have had children by eight women."

"Marvelous," the Great C said, but Meredith could not tell how it meant it. There was a moment of silence.

"I have a gun," Meredith said. "A pistol."

"Do you?"

He lifted it. "I've never fired a pistol before. We have bullets, but I don't know if they still work."

"What is your name?" the Great C said.

"Meredith. Tim Meredith."

"You are a young man, of course."

"Yes. Why?"

"I can see you fairly well," the Great C said, ignoring his question. "Part of my equipment was destroyed in the Smash, but I can still see a little. Originally, I scanned mathematical questions visually. It saved time. I see you are wearing a helmet and binoculars. And army boots. Where did you get them? Your tribe does not make such things, does it?"

"No. There were found in underground lockers."

"Military equipment left over from the Smash," the Great C said. "United Nations equipment, by the color."

"Is it true that—that you could make a second Smash come? Like the first? Could you really do it again?"

"Of course! I could do it any time. Right now."

"How?" Meredith asked cautiously. "Tell me how."

"The same way as before," the Great C said vaguely. "I did it before—as your tribe well knows."

"Our legends tell us that all the world was put to the fire. Made suddenly terrible by—by

atoms. And that you invented atoms, delivered them to the world. Brought them down from above. But we do not know *how* it was done."

"I will never tell you. It is too terrible for you ever to know. It is better forgotten."

"Certainly, if you say so," Meredith murmured. "Man has always listened to you. Come and asked and listened."

The Great C was silent. "You know," it said presently, "I have existed a long time. I remember life before the Smash. I could tell you many things about it. Life was much different then. You wear a beard and hunt animals in the woods. Before the Smash there were no woods. Only cities and farms. And men were clean-shaven. Many of them wore white clothing, then. They were scientists. They were very fine. I was constructed by scientists."

"What happened to them?"

"They left," the Great C said vaguely. "Do you recognize the name, Einstein? Albert Einstein?"

"No."

"He was the greatest scientist. Are you sure you don't know the name?" The Great C sounded disappointed. "I answered questions even *he* could not have answered. There were other Computers, then, but none so grand as I."

Meredith nodded.

"What is your first question?" the Great C said. "Give it to me and I will answer it."

Sudden fear gripped Meredith, surging over him. His knees shook. "The first question?" he murmured. "Let me see. I must consider."

"Have you forgotten?"

"No. I must arrange them in order." He moistened his lips, stroking his black beard nervously. "Let me think. I'll give you the easiest one first. However, even *it* is very difficut. The Leader of the Tribe—"

"Ask."

Meredith nodded. He glanced up, swallowing. When he spoke his voice was dry and husky. "The first question. Where—where does—"

"Louder," the Great C said.

Meredith took a deep breath. "Where does the rain come from?" he said.

There was silence.

"Do you know?" he said, waiting tensely. Rows of lights moved above him. The Great C was meditating, considering. It whirred, a low, throbbing sound. "Do you know the answer?"

"Rain comes originally from the earth, mostly from the oceans," the Great C said. "It rises into the air by a process of evaporation. The agent of the process is the heat of the sun.

The moisture of the oceans ascends in the form of minute particles. These particles, when they are high enough, enter a colder band of air. At this point, condensation occurs. The moisture collects into great clouds. When a sufficient amount is collected the water descends again in drops. You call the drops rain."

Meredith rubbed his chin numbly, nodding. "I see." He nodded again. "That is the way it occurs?"

"Yes."

"You're sure?"

"Of course. What is the second question? That was not very hard. You have no conception of the knowledge and information that lies stored within me. Once, I answered questions the greatest minds of the world could not make out. At least, not as fast as I. What's the next question?"

"This is much more difficult." Meredith smiled weakly. The Great C had answered the question about rain, but surely it could not know the answer to this question. "Tell me," he said slowly. "Tell me if you can: What keeps the sun moving through the sky? Why doesn't it stop? Why doesn't it fall to the ground?"

The Great C gave a funny whirr, amost a laugh. "You will be astonished at the answer. The sun does not move. At least, what you see as motion is not motion at all. What you see is the motion of the earth as it revolves around the sun. Since you are on the earth it seems as if you were standing still and the sun were moving. That is not so. All the nine planets, including the earth, revolve about the sun in regular elliptical orbits. They have been doing so for millions of years. Does that answer your question?"

Meredith's heart constricted. He began to tremble violently. At last he managed to pull himself together. "I can hardly believe it. Are you telling the truth?"

"For me there is only truth," the Great C said. "It is impossible for me to lie. What is the third question?"

"Wait," Meredith said thickly. "Let me think a moment." He moved away. "I must consider."

"Why?"

"Wait." Meredith stepped back. He squatted down on the floor, staring dully ahead. It was not possible. The Great C had answered the first questions without trouble! But how could it know such things? How could anyone know things about the sun? About the sky? The Great C was imprisoned in its house. How could it know that the sun did not move? His mind reeled. How could it know about some-

thing it had not seen? Books, perhaps. He shook his head, trying to clear it. Perhaps, before the Smash, someone had read books on it. He scowled, setting his lips. Probably that was it. He stood up slowly.

"Are you ready now?" the Great C said. "Ask."

"You can't possibly answer this. No living creature could know. Here is the question. How did the world begin?" Meredith smiled. "You could not know. You did not exist before the world. Therefore, it is impossible that you could know."

"There are several theories," the Great C said calmly. "The most satisfactory is the nebular hypothesis. According to this, a gradually shrinking—"

Meredith listened, stunned, only half hearing the words. Could it be? Could the Great C really know how the world had been formed? He drew himself together, trying to catch the words.

". . . There are several ways to verify this theory, giving it credence over the others. Of the others, the most popular, although in disrepute of late, is the theory that a second star once approached our own, causing a violent—"

On and on the Great C went, warming up to its subject. Clearly, it enjoyed the question. Clearly, this was the type of question that had been asked of it in the dim past, before the Smash. All three questions, questions the Tribe had worked on for an entire year, had been easily answered. It did not seem possible. He was stunned.

The Great C finished. "Well?" it said. "Are you satisfied? You can see that I know the answers. Did you really imagine that I would not be able to answer?"

Meredith said nothing. He was dazed, terrified with shock and fear. Sweat ran down his face, into his beard. He opened his mouth, but no words came.

"And now," the Great C said, "since I have been able to answer the questions, please step forward."

Meredith moved forward stiffly, gazing ahead as if in a trance. Around him lights appeared, flickering into life, illuminatng the room. For the first time he saw the Great C. For the first time the darkness lifted.

The Great C lay on its raised dais, an immense cube of dull, corroded metal. Part of the roof above it had been broken open, and blocks of concrete had dented its right side. Metal tubes and parts lay scattered around on the dais, broken and twisted elements that had been severed by the falling roof.

Once, the Great C had been

shiny. Now the cube was dirty and stained. Water had dripped through the broken roof, rain and dirt washed down the walls. Birds had flown down and perched on it, leaving feathers and filth behind. In the original destruction, most of the connecting wires had been cut, the wiring from the cube to the control panel.

And with the metal and wire remnants scattered and heaped around the dais were something else. Littering the dais in a circle before the Great C were piles of bones. Bones and parts of clothing, metal belt buckles, pins, a helmet, some knives, a ration tin.

Remains of the fifty youths who had come before, each with his three questions to ask. Each hoping, praying, that the Great C would not know the answers.

"Step up," the Great C said.

Meredith stepped up on the dais. Ahead of him a short metal ladder led to the top of the cube. He mounted the ladder without comprehension, his mind blank and dazed, moving like a machine. A portion of the metal surface of the cube grated, sliding back.

Meredith stared down. He was looking into a swirling vat of liquid. a vat within the bowels of the cube, in the very depths of the Great C. He hesitated, struggling suddenly, pulling back.

"Jump," the Great C said.

For a long moment Meredith stood on the edge, staring down into the vat, paralyzed with fear and horror. His head rang, his vision danced and blurred. The room began to tilt, spinning slowly around him. He was swaying, reeling back and forth.

"Jump," the Great C said.

He jumped.

A moment later the metal surface slid back into place. The surface of the cube was again unbroken.

Inside, in the depths of the machinery, the vat of hydrochloric acid swirled and eddied, plucking at the body lying inert within it. Presently the body began to dissolve, the component elements absorbed by pipes and ducts, flowing quickly to every part of the Great C. At last motion ceased. The vast cube became silent. One by one the lights flickered out. The room was dark again.

The last act of absorption was the opening of a narrow slot in the front of the Great C. Something gray was expelled, ejected. Bones, and a metal helmet. They dropped into the piles before the cube, joining the refuse from the fifty who had come before. Then the last light went off and the machinery became silent.

The Great C began its wait for the next year.

After the third day, Kent knew that the youth would not return. He came back to the Shelter with the Tribe scouts, his face dark, scowling and saying nothing.

"Another gone," Page said. "I was so damn sure it wouldn't be able to answer those three! A whole year's work gone."

"Will we aways have to sacrifice to it?" Bill Gustavson asked. "Will this go on forever, year after year?"

"Some day, we'll find a question it can't answer," Kent said. "Then it'll let us alone. If we can stump it, then we won't have to feed it any more. If only we can find the right question!"

Anne Fry came toward him, her face white. "Walter?" she said.

"Yes?"

"Has it always been—been kept alive this way? Has it always depended on one of us to keep it going? I can't believe human beings were supposed to be used to keep a machine alive."

Kent shook his head. "Before the Smash it must have used some kind of artificial fuel. Then something happened. Maybe its fuel ducts were damaged or broken, and it changed its ways. I supposed it had to. It was like us, in that respect. We *all* changed our ways. There was a time when human beings didn't hunt and trap animals. And there was a time when the Great C didn't trap human beings."

"Why—why did it make the Smash, Walter?"

"To show it was stronger than we."

"Was it always so strong? Stronger than man?"

"No. They say that, once, there was no Great C. That man himself brought it to life, to tell him things. But gradually it grew stronger, until at last it brought down the atoms—and with the atoms, the Smash. Now it lives off us. Its power has made us slaves. It became too strong."

"But some day, the time will come when it won't know the answer," Page said.

"Then it will have to release us," Kent said, "according to tradition. It will have to stop using us for food."

Page clenched his fists, staring back across the forest. "Some day that time will come. Some day we'll find a question too hard for it!"

"Let's get started," Gustavson said grimly. "The sooner we begin preparing for next year, the better!"

Even the poisonous mushroom-cloud has, perhaps a silver lining. . . .

THE CURSE

By

ARTHUR C. CLARKE

FOR three hundred years, while its fame spread across the world, the little town had stood here at the river's bend. Time and change had touched it lightly: it had heard from afar both the coming of the Armada and the fall of the Third Reich, and all Man's wars had passed it by.

Now it was gone, as though it had never been. In a moment of time the toil and treasure of centuries had been swept away. The vanished streets could still be traced as faint marks in the vitrified ground, but of the houses, nothing remained. Steel and concrete, plaster and ancient oak —it had mattered little at the end. In the moment of death they had stood together, transfixed by the glare of the detonating bomb. Then, even before they could flash into fire, the blast

wave had reached them and they had ceased to be. Mile upon mile the ravening hemisphere of flame had expanded over the level farmlands, and from its heart had risen the twisting totem-pole that had haunted the minds of men for so long, and to such little purpose.

The rocket had been a stray, one of the last ever to be fired. It was hard to say for what target it had been intended: certainly not London, for London was no longer a military objective. London, indeed, was no longer anything at all. Long ago the men whose duty it was had calculated that three of the hydro-helium bombs would be sufficient for that rather small target. In sending twenty, they had been perhaps a little over-zealous.

This was not one of the twenty that had done their work so well. Both its destination and its origin were unknown: whether it had come across the lonely Arctic wastes or far above the waters of the Atlantic, no-one could tell and there were few now who cared. Once there had been men who had known such things, who had watched from afar the flight of the great projectiles and had sent their own missiles to meet them. Often that appointment had been kept, high above the Earth where the sky was black and sun and stars shared the heavens together. Then there had bloomed that indescribable flame, sending into space a message that, in centuries to come, other eyes than Man's would see and understand.

But that had been days ago, at the beginning of the War. The defenders had long since been brushed aside, as they had known they must be. They had held on to life long enough to discharge their duty; too late, the enemy had learned his mistake. He would launch no further rockets; those still falling he had dispatched hours ago on secret trajectories that had taken them far out into space. They were returning now unguided and inert, waiting in vain for the signals that should lead them to their destinies. One by one they were falling at random upon a world which they could harm no more.

The river had already overflowed its banks; somewhere down its course the land had twisted beneath that colossal hammer-blow and the way to the sea was no longer open. Dust was still falling in a fine rain, as it would do for days while Man's cities and treasures returned to the world that had given them birth. But the sky was no longer wholly darkened, and in the west the sun was settling through banks of angry clouds.

A church had stood here by the

river's edge, and though no trace of the building remained, the gravestones that the years had gathered round it still marked its place. Now the stone slabs lay in parallel rows, snapped off at their bases and pointing mutely along the line of the blast. Some were half flattened into the ground, others had been cracked and blistered by terrific heat, but many still bore the messages they had carried down the centuries in vain.

The light died in the west and the unnatural crimson faded from the sky. Yet still the graven words could be clearly read, lit by a steady, unwavering radiance too faint to be seen by day but strong enough to banish night. The land was burning; for miles the glow of its radioactivity was reflected from the clouds. Through the glimmering landscape wound the dark ribbon of the steadily widening river, and as the waters submerged the land that deadly glow continued unchanging in the depths. In a generation, perhaps, it would have faded from sight, but a hundred years might pass before life could safely come this way again.

Timidly the water touched the worn gravestone that for more than three hundred years had lain before the vanished altar. The church that had sheltered it so long had given it some protection at the last, and only a slight discoloration of the rock told of the fires that had passed this way. In the corpse-light of the dying land, the archaic words could still be traced as the water rose around them, breaking at last in tiny ripples across the stone. Line by line the epitaph upon which countless millions had gazed slipped beneath the conquering waters. For a little while the letters could still be faintly seen: then they were gone forever.

Good frend for Iesvs sake . . . .
forbeare,
To digg the dvst encloased . .
heare
Blest be ye man yt spares thes
stones,
And cvrst be he yt moves my
bones.

Undisturbed through all eternity, the poet could sleep in safety now; in the darkness and silence above his head, the Avon was seeking its new outlet to the sea.

ICARUS Brought to Earth

An exciting new article by a top astronomer at Mount Wilson and Palomar Observatories.

By R. S. RICHARDSON

A PROFESSOR of engineering or physics has numerous opportunities for making money on the side these days by acting as consultant for the Army or Navy, or an industrial concern. But about the only time an astronomer's services are of any value is when he is called in to testify where the moon was at the time the crime is alleged to have occurred. Unfortunately, cases in which the position of a heavenly body is of critical importance are relatively few, and the pay for expert testimony has been greatly exaggerated.

One method suggested for cashing in on astronomical observations is by the sale of asteroids. The idea of having a little planet of your very own should make a strong appeal to certain people. Think of the publicity a motion picture actress could derive from the announcement that ARLENA (2606) is at her ascending node. Or the comfort an aged millionaire might feel in knowing that the asteroid that bears his name will continue to appear in the *Kleine Planeten* long after the firm he established has been eaten up by taxes. Clear title to a brand new asteroid should be cheap at $5000. (Asteroids of large eccentricity would become a bit higher.)

Today there are more than 1500 asteroids that have been named or given temporary designations. Wide-angled cameras and fast photographic emulsions have made the discovery of asteroids such a simple matter that astronomers have become pretty choosy. Thus, when they accidentally pick up an asteroid trail upon one of their plates, they seldom bother to follow it up unless the motion is unusual in some respect. How different from a century ago when Hencke, the ex-postmaster in the Prussian city

of Driessen, spent fifteen years fruitlessly scanning the heavens before he found the fifth asteroid, Astrae.

On the evening of June 26, 1949, Dr. Walter Baade took an exposure of an hour on the region around the star Antares with the 48-inch Schmidt camera on Palomar Mountain. Upon examining the plate next day he found an asteroid trail so long that it would have moved the apparent width of the full moon in eleven hours. Motion as rapid as this indicated a body very close to the Earth, possibly another member of the select Amor-Apollo-Adonis-Hermes family. It was so exceptional that he went to the trouble of securing the two additional plates needed to determine a preliminary orbit.

Now Baade had planned to start his vacation after returning from Palomar, and the idea of being delayed by a mere asteroid did not appeal to him. It therefore became necessary to inveigle someone else into taking charge of the plates. The most likely candidates for this job appeared to be Dr. Seth B. Nicholson and myself. Nicholson had discovered three of the moons of Jupiter, and although engaged mainly in solar research, still retained a keen interest in this field; while I had gained experience in tracking down asteroids from assisting him in the past.

Thus it happened that on an excessively hot Saturday morning in July, Nicholson and I were asked to stop in Baade's office. With pardonable pride he displayed some impressive looking 14 x 14 inch plates taken at the Schmidt, and handing us an eyepiece, indicated where to look for the asteroid. In a few seconds we picked it up, a streak of really amazing length among the round star images. He dwelt with enthusiasm upon the remarkable orbit an asteroid must have to leave such a trail. Certainly no ordinary object could have left a trail of that length. I must confess that, at the time, the project did not appeal to me particularly. So often, an asteroid that looks sensational upon the discovery plates turns out to be a bust when its orbit is computed. But, as one of my chief weaknesses is lack of sales resistance, I eventually agreed to work with Nicholson on the orbit.

The asteroid was already so near the sun that it could only be photographed in the early evening, and unless its orbit were determined quickly it would soon be lost forever. This first orbit is not likely to be a very good one. But it should be good enough to predict where the asteroid would be a few weeks

later, and these observations in turn can be used to improve the old orbit, and the process repeated. By thus raising yourself by your bootstraps you gradually close in on the object, until at length you have an orbit so good that it will predict accurately months and even years in advance.* But in the beginning the asteroid is like a fish trying desperately to escape from a net, and unless you resort to vigorous measures it is frequently successful.

The first step was to measure the position of the asteroid with respect to the fixed stars around it. The positions of the stars are taken from formidable-looking books called astrographic catalogues. How the people who make up the astrographic catalogues determine the star positions in the first place is a long story. It must suffice to say that the positions of all the stars depend in the last analysis upon the sun. A couple of centuries or so ago some hardy pioneer started from scratch and all our catalogues today developed out of his work.

After identifying about a dozen reference stars surrounding the asteroid a plate can be measured in only an hour. These raw measures must then be converted into angular distances in the sky, called right ascension and declination. For some obscure reason, each observatory that puts out an astrographic catalogue has used a different method of doing this, so that every time you use a new catalogue you have to learn a new method of reduction. The arithmetical operations are about on a par with figuring your income tax—simple but tricky. We started measuring the plates on Tuesday, July 5, and sent the three completed observations to the Harvard clearing house for redistribution on the following Saturday. This meant that we had several days lead on the rest of the field in computing the orbit. (It isn't considered sporting to hold back your material.)

The work now began to be really exciting. We soon had an approximate orbit that indicated the asteroid was certainly a peculiar one, but it was too poor to give reliable positions. Most of the hot Sunday of July 10 was spent in trying to improve this orbit by means of a differential correction. Figuratively speaking, a differential correction consists in taking the orbit by the back of the neck and forcing it to agree exactly with your observations whether it wants to or not. By Sunday evening the application of such strong-arm methods had

* Eventually even the best orbit will fail to predict accurately, owing to the disturbing influence of the planets.

enabled us to derive an orbit that should be good enough to keep the asteroid in sight for another couple of weeks, at any rate.

We were busy Monday putting a few finishing touches on the differential correction and in computing the elements. The elements consist of six quantities that give you your first picture of how the orbit actually looks in space, if you could see it as a wire hoop stretched around the sun. The element that tells you about the size of the orbit is the semi-major axis. The orbit of the Earth has a semi-major axis of one astronomical unit (93,005,000 miles) or unity. Mercury with a smaller orbit has a semi-major axis of only 0.387099, while Neptune's is 30.070672. No object is known in the solar system, except Mercury and Venus, with a semi-major axis less than unity.

I had been grinding away on my computing machine, following the formulae in the book without paying much attention to what the numbers meant in the sky. When I came to the semi-major axis the machine turned out the figure 0.958690. It was several seconds before I realized clearly just what this meant.

"Why, it's got a semi-major axis less than the Earth's!" I exclaimed.

Nicholson glanced over my shoulder at the figure on the computing machine. "Yes," he said, "Baade really picked out a good one this time."

For me it was the big thrill of the investigation, about as near as I will ever come to having a new planet swim into my ken.

On Tuesday afternoon, July 12, we telephoned Bruce Rule, the observer on Palomar, where to point the 48-inch Schmidt telescope to photograph the asteroid during the next few nights. But now another celestial body was moving in to help the asteroid escape—the Moon! The Moon was in the same region as the asteroid, close enough so that even on a short exposure the plates would be fogged badly, making the asteroid much harder to detect.

While we were waiting to hear from Palomar, a disquieting letter arrived from Leland Cunningham at the University of California at Berkley. He pointed out that our three observations could be made to agree with practically any old orbit; in other words, the orbit was almost indeterminate! This meant that the predicted positions we had telephoned to Palomar might be so far off the beam as to be utterly useless. But there was nothing we could do but wait.

To our delight we did not have to wait as long as we had

anticipated. Bruce Rule was able to secure photographs with the Schmidt on July 12 and 13, and knowing how anxious we were to see them, brought the plates directly to the office upon returning from Palomar. Thus we were back at work again by the evening of Friday, July 15.

Again it seemed as if the asteroid had resorted to trickery to escape us. The apparent motion of a planet among the stars is a combination of its own motion *plus* the motion of the Earth. This causes a planet periodically to move more and more slowly, until it finally comes to a full stop and then starts moving in the opposite direction. The place where the planet is nearly motionless is called its "stationary point."

When Baade first photographed the asteroid it was approaching its stationary point, and although still moving rapidly was slowing down every day. But by July 12 it had reached its stationary point and was standing almost motionless among the stars. This meant that instead of leaving a long trail on the plate easily recognized at a glance, the image was round essentially like those of the stars. The situation was similar to that of a spy in a large city who tries to escape detection by making himself as nearly indistinguishable as possible from the people around him.

To find the asteroid on the plates, we had to resort to a slow and tedious method of search. First we calculated where the asteroid should be located on each plate if it had moved precisely according to prediction. These points were marked on the plates, and lines drawn around them, enclosing an area about one inch square. The asteroid was moving so slowly that the squares contained the same stars on each plate. Next, these star images were checked against one another, in the hope of finding one that differed slightly in position with respect to the others. The trouble was that even one square inch of the plate contained so many star images that their number seemed almost limitless.

After searching persistently all day, the asteroid still eluded us. Several times we had dredged up a suspicious looking object, only to find that it was a defect in the emulsion instead of a planet. It was tantalizing to have the asteroid within our possession and still not be able to put our finger on it.

At last Nicholson spotted an elongated image that seemed more hopeful than anything we had so far uncovered. Identification became positive when a sim-

ilar image was found on the other plate, shifted in position by the amount that the asteroid should have moved in one day.

The positions from these plates, together with three more which Baade obtained a couple of weeks later at the 100-inch telescope, enabled the orbit of the asteroid to be determined with considerable accuracy. But we were only just in time, for, a few days later, the elusive body vanished into the rays of the sun.

Somewhat to our regret, the semi-major axis turned out to be greater than unity after all—1.0783564 instead of 1.0000000, to be exact. But the orbit is so elongated that it stretches from within 17 million miles of the sun at one end out to 183 million miles at the other. No other known body except a comet ever comes so close to the sun. Apollo, Adonis, and Hermes, pass slightly within the orbit of Venus, but this is the only asteroid that dares venture inside the orbit of Mercury.

The size of the asteroid can be estimated from its apparent brightness. The diameter comes out to be nine-tenths of a mile, or 4800 feet, scarcely big enough to make a comfortable space station!

The newspapers gave the asteroid so much publicity that several people wrote in suggesting names. From among these Baade selected ICARUS as the most appropriate, and the name now seems to be official. Apparently a name does not become "official" until the asteroid has gone through escrow at the Minor Planet Center at the University of Cincinnati. In case you have forgotten, Icarus was the rash and impetuous son of Daedalus, a kind of classical hot-rod enthusiast, as it were. In defiance of his father's warning, he flew so near the sun that the wax fastenings on his wings melted, precipitating him into the Aegean Sea. If more asteroids are discovered revolving close to the sun astronomers can name them after their wives and sweethearts as before, but they will be known as members of the Icarus group.

It is interesting to consider the range in temperature that Icarus undergoes as it swings around the sun every 409 days. If it were a non-rotating, airless, black planet its temperature when nearest the sun would be about 1000°F, high enough so that it would glow a dull red. But if the body is rotating and its surface gray instead of black the temperature will be considerably lower. Six months later when farthest from the sun the surface is below freezing.

Until Amor was discovered in

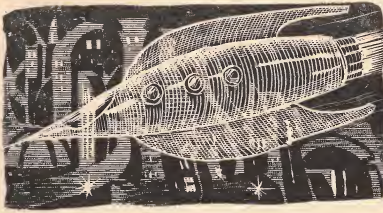
1932 it was supposed that all the asteroids were confined between the orbits of Mars and Jupiter. But objects such as Icarus indicate that asteroids probably exist much closer to the sun than was previously supposed. In fact, they may be quite numerous and only appear scarce because they are so hard to observe. The existence of a new asteroid group close to the sun is sure to influence our ideas on the origin of the solar system.

Icarus may also be of help in determining the mass of Mercury. It is exceedingly difficult to get an accurate value for the mass of a planet that does not possess a satellite. The value of the mass of Mercury given in the books is hardly more than a guess, being based chiefly upon a few close approaches of Encke's comet. Icarus can come within 8 million miles of Mercury, which is only a trifle more than the closest possible approach of Encke's comet. But the period of Icarus is so much shorter than that of the comet that its motion will be more often disturbed by Mercury, and hence more easily observed.

It begins to look now as if Icarus will be most valuable in furnishing astronomers with a new body for testing the theory of relativity. Einstein predicted that, owing to the distortion of space near a massive body like the sun, the orbit of a planet should shift around in space in the same direction in which the planet is revolving. The only planet for which the relativity effect can be determined with assurance is Mercury. Although the value predicted from the theory of relativity agrees almost exactly with that determined from astronomical observations, some astronomers still believe that the test is not conclusive. Now, Icarus should have a relativity effect equal to a fourth of the value for Mercury. If future observations reveal that such is the case, it will constitute an independent proof of the Einstein theory. But please don't write in next year and ask me what the answer is, for we probably won't know till along about 2000.

A few months from now, Icarus will again be close to the Earth. Already astronomers are preparing for the event. But they will have to work fast, for it can only be observed for about three weeks. And it is still possible that our best predicted positions are so far out that Icarus will be missed entirely. Today Amor, Apollo, Adonis, and Hermes are hopelessly lost. If we fail to catch Icarus he also may suffer a similar fate.

There was only one way to explain the strange happenings aboard ship. Someone was a living gateway for the unknown. . . .



GATEWAY

By A. BERTRAM CHANDLER

THERE are people who shouldn't be allowed to travel by sea.

There was *Marie Celeste,* and there was *Waratah*. There was *Cyclops*. There were, there must have been, other ships back in the dim days before records were kept of arrivals and departures —and non-arrivals.

And there are people who aren't allowed to travel by sea.

It's quite simple, really. If they have leprosy, or a wild appearance and straws stuck in their hair—anything, in fact, that cannot fail to attract the attention of the average medical officer—they will be given their money back, be told to get out and walk or ride a bicycle.

This, of course, is wisdom on the part of the authorities. A person suffering from contagious disease, an insane man or woman, would be a walking menace to the lives and well-being of crew and passengers, to the safety of the ship herself. Unfortunately there are some . . .

states . . ., the recognition of which would be beyond the skill of the most accomplished diagnostician. There may be, it is true, practitioners capable of making the diagnosis—but if there are such they are not recognized by medical science. A dark man, perhaps, with a turban—and a crystal. A withered, dirty hag, mumbling over a pack of greasy cards or an unwashed tea cup. People with no brass door-plates, no offices in fashionable thoroughfares, plying their questionable trades in the dusky squalor of dim side streets. Just possibly the bright young men and women of Duke University with their machines for dealing cards and rolling dice, their learned jargon of E.S.P. and P.K.

But no shipping company would dream of ever employing any of these people—not even those from the University. And, luckily, the persons of whom I speak are rare. Perhaps, at one time, they were commoner. Perhaps they are a mutation, a branch from the main stem of humanity, lacking in survival value. The accounts of witch hunts, of mass burnings, from the past show in what way survival value could have been lacking . . .

Rare they may be, but they are dangerous. Consider a ship—a little world, even in these days of radio, isolated, alone, with no suspicion that anything is wrong to trouble the minds of her rulers until, as must have happened so often, it is too late.

TALLENT knew that there was something wrong when the Eight-to-Twelve Quartermaster called him at Seven Bells. It was nothing definite, nothing upon which he could put a mental finger—just a vague, nagging unease. Still—he was, like most Second Mates, a creature of habit. He reached for his cigarettes and his lighter as he always did upon being called, lay in his bunk while the fumes of the burning tobacco helped to clear the fogs of sleep from his mind. From the next cabin, through the thin matchboarding, came the muffled sounds of young Willis, the Junior Watch Officer, tumbling to the deck, fumbling into his clothes, stumbling to his door on his way to the bathroom. Tallent listened to those all-too-familiar noises, watched the curling smoke wreaths from his cigarette writhing in the light of the electric lamp over the head of his bunk. His chubby features, with their preoccupied frown, had assumed an unwonted severity. His ears were strained for some sound, any sound, over and above the

minor, nocturnal creak and whisper of the ship, that would account for his inchoate misgivings.

He raised a weary wrist, looked at his watch. It was five minutes to midnight. He sighed, swung his legs over his bunkboard, and lowered himself to the deck. He grabbed a towel from its rack, hurrying along the short alleyway to the bathroom. He paused, however, outside the door to the Master Compass Room which was, in this ship, situated in the Officers' Flat. He listened intently for a few seconds. But all seemed well. The not unmusical whine of the motor generator never flagged, never varied, told no tale of increase or decrease of revolutions. The almost rhythmic clicking of the transmitter was as it should be. And that fainter, more muffled clicking that was the hunting of the card could have been the working song of a singularly well-behaved clock.

So it was not the compass. Tallent's face lightened almost imperceptibly—but lightened. Whatever it was that was wrong it was nothing for which he was responsible. He rushed on to the bathroom, washed hurriedly, drying his face on his way back to his room. He was climbing into his khaki shorts when he heard Eight Bells being struck on the bridge. The last stroke had hardly faded to silence when he was climbing the ladder from the boat deck to where the Third Officer was waiting for his relief. For a few short seconds everything was normal once more, as it should be. And then, as Tallent stood under the open sky, it seemed to him that the stars were too close, too bright—and that something of the cold of the gulfs between them had taken all the warmth and comfort from the tropical night. He shivered, felt the goose flesh raise itself on his chilled skin. And—

"It's been a helluva watch," complained the Third, looming suddenly from the darkness of the wing of the bridge. "You'd better read the Orders, Tubby, before you take over."

"So there's something wrong . . ." replied the Second. "No, don't tell me yet. Tea comes first. And toast." From the wheelhouse came the subdued clatter of crockery as young Willis busied himself with pot and cups, milk jug and sugar basin. "It's against my Union rules," averred Tallent, "to read or sign Night Orders on an empty stomach . . . Ah, thank you, Five Oh!" He sipped noisily, crunched the crisp toast. "That's better. Now—tell me."

"Oh—it's nothing serious. I suppose you'd think it was fun-

ny. Nothing but complaints the whole watch—a pack of silly women with nothing better to do than worry the Bridge. Old Mrs. Cartwright insisted on seeing Jumbo. She saw him, too—although he wasn't too pleased. Hence his Night Orders. *He* retires to his virtuous couch and leaves us holding the baby. Rounds every half hour by junior watch officer, stand-by Q.M. on the Promenade Deck the whole time. Read it all—and weep!"

"But why?"

The Fifth, who was standing beside his two superiors, echoed the question.

"Oh, Peeping-Tomfoolery, of a sort. They say there's been somebody prowling around the Promenade Deck, poking his prurient paws through people's ports. As some of the people in question were ladies having their beauty sleep, and as their bunks are right under those ports, they didn't like it. No, sir, they did not. I should imagine that at least half the bell pushes on the Promenade Deck were being shoved to old Jackson. He comes up here to unburden his soul to me, and I send Brown—it was his stand-by—down to make rounds with him. Then, while they're making their rounds, old Mrs. C. comes blustering up here. You've never seen her in her nighty and dressing gown, with her hair in curlers, have you? A horrible sight. She demands to see the Captain, and I tell her (a) that she can't see him, and (b) that passengers are not allowed on the bridge. Jumbo hears the gabble of girlish voices and comes stamping out, and tears us both up. When I get him calmed down he stays up here and sends me down. Everybody pounces on me and tells me the story of their lives, and how a horrible, hairy hand—all cold, it was—came through their ports and started massaging their pretty little necks. It was one of the crew, they say, or some low type from the Tourist Class. It couldn't be any of the gents from the First—oh, no, of course not. They didn't *see* anything, mind you. They couldn't tell me anything useful. They couldn't be sure that it wasn't Minnie—and she's altogether too fond of jumping through ports . . ."

"I know," agreed Tallent, thinking of cargo plans left open on desks and marred by the imprint of a cat's four feet.

"Some more tea?" suggested the Fifth. He took the Second's cup, went with it into the dimly lit wheelhouse where the supper box was standing on the flag locker.

"So there you are," said the

Third. "Keep the Fifth chasing round to try to catch the villain red-handed. Tell the Mate to keep the Fourth chasing round likewise. And *if* you catch anybody," he laughed, "keep 'em under lock and key till the morning."

"Where?"

"He didn't say." He shifted the key of his voice to a deep, throaty rumble. "*I* never bother myself with minor details. What are my officers paid for?"

"Did he tell Mrs. C. that?"

"He did. Well—I'm away. See that nobody disturbs *my* sleep!"

"Hoy! The course!"

"Sorry. Two five three. A fine night, and nowt in sight. See you in the morn!"

Tallent accepted his second cup of tea, took it into the chartroom with him. He looked at the chart—Cape Horn to Cape Corrientes—and at the little circle, just north of the pencilled track, that represented the p.m. star position. He opened the Night Order book, read therein in the Captain's florid handwriting that the course was 253, Gyro and True, and that Standing Orders were to be observed. He read, too, that the junior watch officers were to make half hourly rounds with a view to the apprehension of whoever was annoying the passengers berthed on the Promenade Deck. There was more to it than that—much more—but that was what it boiled down to. Tallent sighed, thinking of the pile of chart corrections that he had hoped to get through this watch. It was out of the question now—the Fifth, instead of keeping the bridge, would be chasing around the decks with a torch most of the time. The Second pulled his pen from the breast pocket of his shirt to sign the Orders, and sighed again. Somehow he was reluctant to leave the well-lighted, familiar chartroom for the uneasy darkness of the bridge, for the subtly, unaccountably unfamiliar stars.

"AND who was it?" asked Lizzie.

Tallent grunted, looked critically down at his plate of eggs and bacon. After he had helped himself to pepper and salt he allowed himself to be distracted from his breakfast, turned himself in his chair to face the Nursing Sister. His plump face was sulky, his scanty, sandy hair seemed to be bristling with protest. One of the epaulettes on his white shirt was hanging a little askew. He looked like what he was—an easy-going officer jolted out of the comfortable routine of his days and nights, all dumb complaint.

"Nobody," he said shortly.

Lizzie grinned. The long, horse face under the short, iron gray hair, over the starched severity of her tropical uniform, was far from unpleasant. There was something of the little girl in her when she smiled, something that made her companions forget the bigness of her—the bigness of bone unredeemed by softness or grace of flesh.

She said, "And what do *you* think, Miss Carr?"

Carolin Carr laughed. Her teeth were very white against the duskiness of her skin—the duskiness that seemed almost pale against the blackness of her hair. Braided it was, and wound somehow around the small, well-shaped head. She was a plump girl—or woman—and small, and laughter suited her. Her voice, a rich contralto, had undertones of laughter in it.

"I don't know, Miss Scott. Really I don't. I slept. It was only this morning that I heard there had been a . . . a flap, do you call it, Tubby?"

"Yes." Tallent speared a piece of bacon viciously with his fork, raised it to his mouth. He chewed. "And if it hadn't been your beastly flap I'd have got all of Folio Three corrected."

"I'm sorry. I *am* sorry. But it wasn't *my* flap. And hasn't it made you sulky! But you aren't the only one . . ."

She looked across the dining saloon to the Captain's table, to where, at the head of his board, sat Jumbo Jenkins, a larger, stouter edition of his Second Officer, more assured, with more than a little of the sullen dignity of the animal after which he was named. But the bland assurance was shaken this morning; there had been happenings in the little kingdom over which Jenkins was king, the news of which would prove displeasing to those real rulers—staid managers, unglamorous directors—whose servant Jenkins was. The favored few at his table—a Baronet, two Colonels, their ladies —had given up trying to make conversation.

"Yes," said Carolin. "He's miffed. And all over some silly woman's imagination."

"Come, now," put in Hillyer. "I don't think it was imagination . . ." He was the fourth at Tallent's table, another passenger, tall, wispily blond, with weak blue eyes peering at a bewildering world through thick-lensed spectacles. "It wasn't imagination, my dear Miss Carr. I heard them prowling around outside . . ."

"Them?"

"Yes. There were two . . ."

"Probably three," said Tallent sourly. He buttered a piece of toast, spread it thickly with

marmalade. He halted its passage to his mouth to ask the steward for more coffee.

"Three? Surely not . . ."

Tallent finished his toast, then said, "Yes. The Night Watchman, the stand-by Quartermaster, the Fifth Mate. So you'd better be careful next time you go on the prowl, Hillyer. I've given orders that anyone they find is to be well beaten up . . ."

Hillyer blushed.

"Really, Mr. Tallent . . ."

Lizzie chuckled. Carolin smiled.

Tallent looked at his watch. He said, "Excuse me, people. I have to go on top to do my sums—otherwise you'll be getting no figure for the Daily Run . . ." He got up, walked with the deceptive speed of the plump—you could not yet call him fat—between the tables to the door.

"I don't know what he meant," spluttered Hillyer. "I hope you don't think, Miss Carr, that I would . . ."

"Of course not. I'd never dream of accusing you of that kind of thing."

Hillyer flushed. The remark need not have been made in just that way.

TALLENT was irritable when he came on watch the following midnight. This business of the prowler was getting into his hair. He had been on the Promenade Deck after dinner with Carolin the previous evening, enjoying a cigarette and a few minutes of talk, when the Captain's steward had found him and told him that the Captain wanted to see him. The Chief Officer had been in the Captain's room, the Purser, the Surgeon, the Chief Steward. It was, in effect, a conference to discuss ways and means of laying the disturber of the First Class passengers' sleep by the heels. Tallent had been annoyed at being torn away from his talk with a girl who was, in his opinion, the most attractive on board. He was annoyed at having, in effect, the whole business dumped into his lap. The Middle Watch, in his opinion, was a period wherein the conscientious navigator could make up arrears of work—not a period of time to be devoted to the patrolling of the decks. What was the Night Watchman for? Why couldn't the Chief Steward put on extra men for night duty?

He had been unwise enough to suggest this—hence the irritation that had persisted until now, that had survived the few hours' sleep between dinner and midnight. He had been told, almost in those words, that he was senior enough to play at police-

man but not sufficiently senior to shove his oar in.

There was, however, one slight consolation. The feeling of suspense, the dim, vague knowledge that there was something wrong, was absent. This, apart from the fact that he would have to reconcile himself to the almost continuous absence of his junior watch officer and his stand-by quartermaster, promised to be a normal watch. Too normal, perhaps. The toast was cold and soggy, and the butter had been tainted with something that, by its flavor, could have been insecticide. The milk was reconstituted dried milk at its worst, by its taste implying that it had been mixed with acrid, raw steam in a corroded brass container.

The Third, handing over, said that all had been quiet. The majority of the passengers, it seemed, had not turned in until midnight. The piano in the lounge had been tinkling away until just before Eight Bells, and some of the younger people had been dancing on deck to a portable gramophone. But all was quiet now. "So," said the Third, "she's all yours. I'll go around now, and if I don't come back you'll know that there's nothing to report. What time is the Fifth making his rounds?"

"Every half hour—starting at twelve-thirty. Lord! This is vile tea! Tell Jackson to rustle up some decent milk and butter for two o'clock supper, will you?"

The Third went down. Tallent filled his pipe and wandered into the chartroom to light it. When it was drawing sweetly, he came out again, leaned on the forward rail, and let his gaze wander around the horizon, then up to the familiar, bright constellations. He wondered absently what it was that had made them, last night, assume a subtle alienage, what it was that had caused the strong illusion of cold. If it had been an illusion . . . Hadn't he read somewhere—or had somebody told him—that any psychic manifestation is accompanied by a drop in temperature?

"Hooey!" he declared abruptly.

"What was that, sir?" asked the Fifth.

"Oh—nothing. Didn't know you were there . . . I suppose Pringle is down on deck now. Has he a torch?"

"Yes. I'm taking the one from the chartroom."

"H'm. What's that you've got?"

"One of my Indian clubs. I let Pringle have the other one."

"Oh. I'm not sure that I like it. If the pair of you beat some innocent passerby to a pulp

there'll be an even worse stink than what we have on our hands just now."

"We'll be careful, sir. We won't use 'em unless we have to."

"You'd better not."

Taylor, at the wheel, struck one bell—half an hour after midnight.

"Can I go down now, sir?"

"Yes. And don't park your backside in the wireless room for a quiet smoke either."

The Fifth went down. Tallent felt bored, lonely, at a loss for something to pass his time. Under normal circumstances the Middle, the Graveyard, Watch was his busiest time. With a certificated officer to keep the bridge, he could amuse himself with all kinds of work. He was too good an officer to consider leaving the bridge unmanned while he went into the chartroom to correct charts. A good intention to work only in five-minute snatches is too easily forgotten—and even in mid-Pacific there is always the slight risk of hitting something.

Tallent wandered into the wheelhouse. Taylor, at the wheel was a good man, using, in this calm weather, only one or two spokes of the wheel, letting the steering repeater click only at infrequent intervals, never giving it the chance, as so many did, of delivering itself of a rattling protest. Tallent stood for a while looking at the greenly luminous card of the gyro repeater, then at the orange-lighted card of the magnetic compass swinging sluggishly in its bowl. His pipe went out. He didn't bother to relight it, but left it on the flag locker. He decided to take a couple of compass errors to pass the time.

On monkey island he uncovered first the standard compass, then the bearing repeater. Astern, low to the eastward, Sirius was coming up, showing briefly on the very edge of the horizon like the impossibly bright masthead light of some great ship. First Tallent took his bearing on the magnetic compass, then on the gyro repeater. Leaving the binnacles uncovered—to cover them later would all serve to pass the time—he hurried down to the chartroom. The half minute or so elapsed between bearings, after the second bearing, would not matter in working an azimuth—the roughest and readiest, perhaps, of all navigational calculations. He opened the lid of the chronometer box, took the time.

To run up a D.R. was a matter of seconds only. To convert Longitude into Time could be—and was—done mentally. From the Almanac came R and Right

Ascension, Declination. From the Azimuth Tables—entered with Latitude, Declination and Star's Hour Angle—came the true bearing of Sirius. The difference between true and observed bearings . . .

Tallent cursed. He refused to believe that his gyro compass had an error of fourteen and a half degrees low. He pulled the Deviation Book down from the shelf, looked at the compass errors obtained by the previous watches. The Four-to-Eight had had an amplitude, a sunset bearing. Error—half a degree low. The Third had logged a bearing of Jupiter. Error—one-quarter low . . .

I've made a silly mistake somewhere, he told himself. He thought that if he worked the error of the magnetic compass it would tell him wherein lay his slip. According to the figures on the scribbling pad the standard compass had a deviation of thirty-four degrees east. According to the Deviation Book it had been three degrees west on the Four-to-Eight, two and a half on the Eight-to-Twelve.

"So I can't do kindergarten sums," he said aloud. Then he shivered. The air was suddenly cold—too cold for the time and the place. There was that sense, once more, of something amiss, of something terribly, dangerously wrong. So strong was it that Tallent, hurrying out to the bridge, more than half expected to see the lights of some other ship bearing down upon them, some vessel whose officer of the watch had been busy in the chartroom, whose look-out had been criminally negligent.

There were no lights. There were no dark land masses, uncharted, humping low and dim against the palely luminous sky. There was not the far more possible swirl of cold, wet, white-green fire to mark where the low seas were breaking over some uncharted reef. There was just the dark through which the ship was steadily pushing her great bulk, the stars overhead.

The stars . . .

For a fleeting moment it seemed to Tallent that his queer compass error had not been a result of his own carelessness in observation or calculation, that he should get out his sextant and measure angular distances, satisfying himself that there had been no shift, barely apparent to the eye but betraying itself to instruments, of the stars themselves. He laughed—an unmirthful little sound that denoted only uneasiness, told himself that such an indulgence in academic navigation would be fiddling while Rome was burning.

But was Rome burning?

He went into the wheelhouse, feeling strongly the need for company. Taylor's face was ghastly in the green glow from the repeater card. How would it look, wondered the Second Mate, in good, clean white light?

"It's cold," complained Taylor. There was a barely perceptible tremor in his voice. Then: "It shouldn't be cold here, sir, should it? We aren't past Pitcairn yet."

"No, it shouldn't be. But there's that chilly, Antarctic drift off the Galapagos Islands, you know . . ."

Sure, he told himself. But we'd never feel the Peru Current this far south and west . . .

Somebody was coming up to the bridge. Somebody whose feet clattered in haste on the slightly loose brass treads of the ladder. Tallent went out of the wheelhouse abruptly, not knowing what or whom to expect, saw that it was young Willis, the Fifth. He was gingerly holding something small and shapeless.

"What's that you've got there?" asked his superior.

"Minnie, sir. Look!"

He went into the chartroom, laid his burden carefully on the table. When Tallent started to protest he said, "Oh, it's all right. There's no blood. But what killed her?"

The only light was that from the shaded lamp over the chart itself. Tallent switched on the main lights, then bent to examine the dead animal. He didn't like what he saw. True—there was no blood. There were no marks of violence. Had there been any froth around the mouth, around the bared teeth, the Second Mate would have said that a fit of some kind had removed the unfortunate cat from among the living. The snarl, the staring eyes, the unsheathed claws, pointed to something of the kind. He said as much.

"But it wasn't a fit, sir, "protested Willis. His thin, young face was dreadfully earnest. "It wasn't a fit."

"Then what was it?"

"I . . . I don't know. I was coming along the starboard side of the promenade deck, on my way to the bridge. I heard Minnie spitting and growling—just in the lobby to the lounge, she was. There was some kind of . . . shadow in there. I shone my torch into the lobby—but the shadow didn't go away. It moved. It seemed to spread over Minnie. She screamed—just once—and then the shadow was gone. And she was . . . like this."

"Look here, Five Oh. You can't expect me to believe that. She threw a fit, and she died . . ."

"Have you ever known Minnie to throw a fit before?"

"No-o . . ." admitted Tallent reluctantly. "But that's no reason why she shouldn't start now . . ."

"But . . ."

Tallent laid a hand on Willis' shoulder. "I'm not saying that I believe you," he said. "On the other hand—there's something damned funny going on. But look, man, we can't tell Jumbo that Minnie was nobbled by a . . . shadow. We can't. Nobody believes in ghosts these days . . ."

"Nobody admits that he believes . . ."

"Nobody believes in ghosts," said Tallent firmly. "There's an explanation to everything. All we have to do is find it."

"I thought," began Willis diffidently, "that we might keep Minnie's body till the morning, and get Jeff to . . ."

"Ask Jeff to perform a post mortem on a *cat?* Really, Five Oh! Ah, here's an idea. You saw her eating something, and she went into convulsions and died . . . And we want to find out what it was, naturally. With all these children we have on board . . ."

"I'd sooner tell the truth . . ."

"There are times when it's wisest not to. Phew! It's warm in here. I hope she keeps . . ."

From outside came two double strokes on the bell, Four Bells, two o'clock. There was a rattle of crockery as Pringle, coming up to relieve the wheel, deposited the officers' supper box on the flag locker. Tallent, surprised, looked at his watch. "What with dead cats," he said, "and imaginary ghosts, and phoney compass errors, time is marching on at no mean velocity. Oh, well—let's see what the tea and toast is like . . ."

"IS YOUR girl friend coming up?" asked Willis.

"*My* girl friend? Oh, you mean Miss Carr. I wish that she was—I'd sooner show her all my little treasures than this bunch of boneheads from Jumbo's table. She said she was sleeping after lunch as a matter of fact. She didn't get much sleep last night."

"Funny. There was no trouble. Except—" and the Fifth's face darkened—"for Minnie . . ."

"It must have been Minnie she heard. She says that something woke her up just before two, and that she couldn't get to sleep again . . . I could have asked her up then to take a compass error for me—I still don't know what I did wrong with the first one I took . . ."

"Are they up yet, Tubby?" asked the Radio Officer, who

had come to the bridge to demonstrate the radar to the Captain's guests.

"No, Sparks. But any minute now . . ." Tallent resumed his conversation with the Fifth. "Talking of Minnie, I'm still annoyed with the Mate . . ."

"What's he done to you?" asked Sparks.

"Nothing," said Tallent shortly. He saw no reason why the whole ship should be told of how the Chief Officer, going into the chartroom, had demanded of the world at large what that bloody thing was doing there, had picked up Minnie by the tail and slung her over the side . . .

"Here they come," whispered Willis.

Tallent grabbed his cap from the engineroom telegraph, clapped it on to his head. He needed it to be able to salute properly. "Good afternoon," he said politely. "Yes, this is the bridge. Yes, Colonel, that's the wheelhouse . . . Of course, Lady Pamela, we'll let you try your hand at steering . . . But we were thinking that Mr. Carter, here, could show you the radar first . . ."

Sparks led the party up the ladder to the radar hut, which was situated on the after end of Monkey Island. After a minute or so there came the sound of rack blowers starting and then, a little later, the noise of the aerial motor. Tallent went into the chartroom, where, in its own little, shaded box, the second P.P.I. lived. He fiddled with focus and brilliance controls—but there were, of course, no traces, no picture being painted on the inner surface of the fluorescent screen. There were only the glowing range circles.

There were only . . .

But what was that?

Tallent stared. Land, bearing green six oh, range twelve thousand? Impossible! Cloud, perhaps . . . A rain squall . . . But it looked—solid . . .

Carter was standing beside him. "This land, Tubby . . ." he was saying.

"Land?" Tallent took Carter's arm, led him to the chart table. He picked up a pair of dividers, indicated with them the pencilled Great Circle track on the small scale chart of the Pacific, brought the points of the instrument to rest on the little, circled, dated cross that was the Noon Position. He shifted his dividers to the margin of the chart, measured off three hundred and sixty miles—six degrees of latitude. He stepped off the distance to Pitcairn.

"Eight days," he said, "to land . . ."

"But . . ."

"You should know. Cloud. A rain squall . . ."

Sparks broke away from the Second Mate. He went to the chartroom door, stared out over the sea on the starboard bow. His voice trailed away as he said, "I could have sworn . . ."

"Oh, there you are, Mr. Carter," cried Lady Pamela, who had come down from the radar shack.

"I was just coming back to you. I came down to make sure that the chartroom P.P.I. was working properly . . ."

"But you've picked up land. How thrilling! Is there a pair of glasses?"

She found Willis', put them to her eyes, stared out to starboard.

"It's only a cloud," explained Tallent.

"A cloud? But I can't see any cloud . . ."

Nor could she. The sky was perfectly clear.

"It's in the process of forming. It's too tenuous to show up to the naked eye yet. But it reflects our radar impulses . . ."

"Ions and all that . . ." chipped in Carter.

But there must have been a cloud somewhere. Rain was falling just off the port beam, distinctly audible, visible as the slightly ruffled surface of the sea was pocked by little white splashes. Tallent heard Willis call his name, hurried to the port wing of the bridge. The Fifth Officer was staring down at something on the scrubbed deck, something that seemed to have been stunned or injured by its fall, that was kicking feebly, that tried to . . . jump . . .

"A frog . . ." whispered Willis. "A shower of frogs!"

"Dump it, quick. Before that woman sees it. Sparks is blinding her with science—but let her see a shower of frogs on top of a P.P.I. ablaze with non-existent land . . . I don't know what it is that's happening—but we have to keep it from the passengers . . ."

Willis picked up the little frog. He looked at it sadly. He dropped it over the side.

"DID you sleep well, Carolin?" asked Tallent.

"Not too badly, Tubby. Yes please, Morris, I'll take soup. Not too badly, as I said. But I had some vivid dreams . . ."

"Probably more entertaining than the bum films they've given us this trip . . . Were they all in glorious technicolor? The dreams I mean."

"Sort of," said the girl. "Colored—but rather drab. It was that strange, dim scenery that comes so often with dreams."

"Some people say that you

can't see colors by moonlight," contributed Hillyer.

Carolin's hand paused, the soup spoon arrested half way to her mouth. Tallent looked at her intently. She didn't look too well, he thought. There were dark shadows under her eyes, and her pallor was more than a matter of contrast between dusky skin and intensely black hair.

"Yes," she said. "That's it. It was a sort of moonlight effect. But not quite. And the ship was flying—and she was at a queer angle to the country over which she was flying. There were some fairly distant mountains, snow covered, over to the right, and they were high. Our port side seemed to be brushing a kind of swamp . . ."

Lizzie looked bored. Other people's dreams can be very boring. Her seat faced outboard, so that she was looking towards the side of the ship, to the big, round table at which sat the junior officers.

"Your A.D.C. seems to have it in for you, Tubby," she remarked. "He's casting some really *narsty* looks in your direction . . ."

"I hurt his feelings, I'm afraid. He wanted to make a big splash at the Air Ministry, wanted to really spread himself when he wrote up the Meteorological Log . . ."

"What about? Yes, Morris, I'll try the fish . . ."

"You've got him trained, haven't you, Lizzie? He'll bring you a double portion, as usual . . ."

"I 'as to keep me strenf up, dearie . . . But this log of yours?"

"Oh, nothing. Just a rather unusual kind of precipitation. It's happened before, I know—but I'd rather it didn't happen to us. People who see sea serpents soon lose their reputations as sober and reliable officers . . ."

"Did you ever have one?"

"I say," put in Hillyer, "did you really see a sea serpent?"

"No. Yes, duck, please, Morris. And try to convince 'em in the pantry that it's for the Captain's table . . ."

"I suppose that there are such things," said Carolin slowly. "Sea serpents, I mean. There's a book that Jeff lent me—" Lizzie glared at her—"sorry, Miss Scott, Dr. Clayton I mean. What's it called, now? *Mysteries of the Sea,* or something. Marine monsters, missing ships—oh, all kinds of interesting things. But not the kind of stories for light reading on an ocean voyage. Rather—frightening . . ."

"There's only one possible mental attitude for the seaman," Lizzie told her. "It can't happen here. And, meanwhile, you do

your damnedest to make sure that it doesn't happen."

They finished their meal. Hillyer wandered off to the bar, Tallent and the girl went up to the Promenade Deck. The Sister waited on the Promenade Deck square for Dr. Clayton—usually he hurried through his meals, but this night he seemed to be taking one of his minor duties seriously, that of entertaining the passengers at his table with conversation.

The Second Mate and Carolin went to the ship's side, leaned on the broad, teakwood rail. Tallent brought out his cigarette case. A few seconds later his lighter flared. He and the girl quietly smoked, looking down at the dark water slipping along the sheer flank of the ship, at the tiny, ephemeral stars and nebulae born of the disturbance of the phosphorescent water. The night was warm, the stars glowed rather than glittered, pulsed rather than twinkled.

There were not, as yet, many people on deck. Of this Tallent was glad. There is so little privacy aboard a ship—and officers, ever in the public eye, must keep their names clear of the slightest suspicion of scandal. Not for them the dark corners, the secluded nooks. The opportunities for shipboard romance are always present—and the penalties range from exile to the more scruffy cargo liners to dismissal.

"I shall be sorry when we get to Auckland," he said.

"And I." She did not have to ask him what he meant. "But you have the address, Tubby. I shall be very annoyed if you never come around to see me . . ."

"Got a light on you?"

Tallent swung around, trying not to show his displeasure. It was Dr. Clayton. He was called Jeff because of a real or fancied resemblance to the longer half of a famous comic strip partnership. He looked, thought Tallent a little disgustedly, more like something out of a comic strip than an officer of a first class passenger liner. His hair was untidy, and he had obviously been drinking—not to excess, but not far short of it. There were splashes of some kind—possibly soup—down the front of his white uniform jacket. Lizzie, standing beside him, looked far more of an officer, a seaman, than he did. The Second Mate remembered that he had been told, on first joining the ship, that Lizzie carried Jeff. There was something of man and wife in the relationship, something of weak, ineffectual Mate and tough competent Bo's'n.

Lizzie should have been a Bo's'n.

Tallent pulled out his lighter,

lit the cigarettes of the medical department. Jeff dragged at his savagely then said, too abruptly for good manners, "What *is* going on on the Middle Watch, Tallent?"

"You should know. Passengers are more your worry than mine . . ."

"Oh," said Jeff, arching his thin eyebrows.

"I've finished your book," Carolin put in hastily. "It was very interesting, Dr. Clayton . . ."

"It's making her dream," Lizzie remarked in what just might have been a kindly voice.

Sidetracked, Clayton mounted his favorite hobby horse.

"Yes, it *is* interesting. Ships —when you consider all the marked, floatable stuff about their decks, don't just vanish without a trace. There was *Waratah* . . ."

"She was unstable," declared Tallent. "Everyone knows that. She got in the Agulhas swell—and her roll synchronized with the wave period . . ." He threw his cigarette over the side to leave his hands free to illustrate a rocking motion. "And when she reached the critical angle—it was sudden . . ."

An observer, not overhearing the conversation, would have thought that he was conducting an invisible, inaudible orchestra.

"All right. I'll grant you *Waratah*. But what about *Anglo-Australian?*"

"Anglo-Australian?" asked Carolin, curious.

"Yes. A big, well-found cargo liner, with wireless. She just went—somewhere off the Azores. Not a squeak from her . . ."

"Perhaps . . ."

"Perhaps—nothing! When the pumps can't hold the water, or when the fire, in spite of all that you can do, is creeping from compartment to compartment—why, you send for Sparks, you tell him to start squealing at the top of his voice on every frequency known to civilized man. *Don't you?"*

"Yes."

"But not when it's—shadows. You leave it then, you let it slide—and one fine day, or night, it's too late. You've had it."

"Really, Doctor . . . Miss Carr, a passenger . . ."

His voice was the voice of one who says— "Not in front of the children."

"Miss Carr sits at our table," said Lizzie. "She hears things that the other passengers don't —and I'm sure that we can rely on her good sense . . ."

"I hope so. Jumbo's going to be in a tearing rage if he hears the way that you've been talking."

"Jumbo. Captain pachydermous Jenkins. I've seen him myself. I don't go around with my eyes shut, and my ears closed. And I don't want the same thing to happen to any of the children as happened to Minnie . . ."

"And the ship," said Lizzie. "The ship . . ."

A Scot, thought Tallent. *The worship of steel and steam, the idolatry of the Machine . . . And, perhaps—what's the word, now?—fey into the bargain. A queer, daft combination. Dangerous perhaps . . .* He was a little shocked. He looked at Lizzie, stiff and straight in her starched drill, rigid, uncompromising . . .

From above, from the bridge, faint and clear, drifted the sound of Eight Bells.

"Bed time," said Tallent. "I have a watch to keep. Good night, Jeff. Good night, Lizzie. Good night—Carolin . . ."

On his way to the officers' flat he wondered if he should see the Old Man, report something of what had happened. *Please, sir, I got a funny compass error . . . Please, sir, the Fifth Officer thought he saw a shadow when Minnie died . . . Please, sir, we picked up land that wasn't there on the Admiralty* 268 . . . It'd sound fine, wouldn't it? He could imagine, with no effort whatsoever, the Captain's elephantine, crushing sarcasm.

He went straight to his room and turned in.

THE Middle Watch came round again, as it always does, and Tallent succeeded in heaving himself out of his bunk and dimly groping his way to the bridge. He broke one of his Union rules, went straight to the chartroom to read and initial the Captain's night orders. He was afflicted by a little, nagging sense of guilt, a feeling that there was much that he should have reported—even though it was all no more than vague, formless, superstitious fears and presentiments. But there was nothing fresh in the orders—merely the usual routine stuff together with an admonition to all watch-officers not to relax their extra rounds. The Third told him that it had been a quiet night—so far. The piano in the lounge—just below the bridge—was still tinkling, but the boat deck lights shone over bare and deserted stretches of planking.

Tallent yawned hugely. He accepted the cup of tea that Willis brought him, gulped and swallowed noisily. The air was hot and moist, and already his khaki shorts and shirt were damp with perspiration. He felt confined, cooped in. He said to the Fifth: "I think I'll make an occasional round this morning.

I can't do any work up here these days, so I may as well stretch the old legs and try to get my weight down . . .

"Is there any more toast?"

After half an hour or so the piano tinkled away into silence. A man and a woman came up to the boat deck, strolled up and down for a few minutes, smoking. They went below. Tallent, leaning on the after rail of the bridge, watched Willis and Pringle walking along the port side, swinging their Indian clubs, shining their torches into the dark shadows of the cradled boats. They walked with that peculiar, atavistic swaggering slouch that comes with the carriage of any blunt, primitive weapon. Tallent was mildly amused.

The junior watch officer and the quartermaster finished their rounds of the boat deck and went down by one of the forward ladders to the Promenade Deck.

Tallent felt rather lost and lonely when they had vanished from sight. He climbed up to monkey island, took azimuths on both gyro and magnetic compasses and went into the chartroom to work them. Error and deviation were normal. He came out to the bridge again, stared absently at sea and sky.

After awhile Willis came back. He reported that all was well, but that some of the Tourist Class passengers were sleeping on deck aft. "Can't say that I blame 'em . . ." grunted Tallent, "but remind me to tell the Mate when he comes up at four . . ."

Taylor, at the wheel, struck two bells. The Second Mate ungummed himself from the forward bridge rail and yawned. "I'm going round now," he told the Fifth. "If you see anything, don't touch it. *If* you want me, give a couple of short toots on your whistle . . ."

"Do you want this club, sir?"

Tallent hesitated. He took the proferred weapon after a second or so, hefted it in his hand. "This'd make a nasty dent in anybody's noggin . . ." he admitted. He sauntered off the bridge, swinging the club. He strolled casually around the boat deck. He went down to the Promenade Deck, meandered aft—then suddenly stiffened. There was a dim, gray figure leaning on the rail, looking out to sea. Silently, on rubber soled shoes, he covered the distance—the length of the deck—between him and the nocturnal prowler. He clapped a sudden hand on the shoulder and said, in his most official voice, "Well, and what can we do for you?"

LIZZIE jumped. It was the first time that Tallent had ever seen her shocked into some semblance of ordinary, fallible humanity. But it was only for a fleeting instant. She recovered quickly—and then the old, worn dressing gown became as much a uniform as her stiff, starched drill ever was. She looked at the Second Officer without approval.

"You should wear a cap, at least," she said. "Slouching around in that rig, with no insignia of any kind, you have no right to interfere with anybody, no matter what they're doing."

"Oh, haven't I? Here is my right!"

He hefted the club.

"Don't be a fool, Tubby." Then— "Have you a cigarette?"

"Sorry. I only carry a pipe on watch. But I'll pop up . . ."

"Don't bother. I only came out for a spot of fresh air. It's stifling down on "A" Deck. Hot fans pushing hot, wet air through hot alleyways . . ."

"Well—any prowlers tonight?"

"I—I don't know. When I came up the ladder from "A" Deck I thought I saw a shadow just ahead of me—a funny sort of shadow. It wasn't mine—but it moved. And I was the only thing moving. And there was a sudden chill . . ."

Tallent shivered.

"Are you *sure* you saw this?"

"No. That's the trouble. If I *were* sure. . . . Mind you—I don't go much on Jeff's ideas. I've read most of his books—and just as you think that they have something of real value to tell you they go tailing off into the most fantastic rubbish. Oh—I'm Scots, and proud of it. I've been told that, at times, I'm fey. But remember this—a Scot can be fey and still, at the same time, hardheaded . . ."

"I can well believe that. But, tell me, just what do you make of all this? We haven't been bothered with the prowler—knock wood—any more, but, now and again, there's something wrong. Something very badly wrong. You remember the old Johnnies who were afraid that, if they went on sailing far enough, they'd fall over the edge? It's a feeling like that."

"Perhaps that's what happened to the missing ships . . ."

"Pull the other one, Lizzie—it's got bells on it. You don't really mean that?"

"I don't know. I don't know, Tubby. If you fall out of a three or four dimensional universe into some other number of dimensions, isn't that falling over the edge?"

Tallent pulled out his pipe. This was too much. Lizzie hardheaded? She'd said it. He filled

the bowl, put the pipe in his mouth. His lighter flared. He was surprised to find that he was appreciative of the brief warmth on his hands.

"These mediums," went on the Sister. "They've got something. Oh—I ken fine that there's trickery and deception of all kinds, and I'd hate to feel that I was coming back as a poor ghost, to gibber silly nothings through the dirty lips o' the likes o' them. When we die—we die. But there're other worlds, it could be, on different . . . planes. And these poor, silly medium folk are, by some freak of psychological make-up, just a gateway through which . . . *things* can come from those worlds into this. Or, perhaps, people and . . . ships can fall from this world into one of those others . . ."

"You can't believe that."

"I don't. I'm just talking, Tubby. What was I saying . . .?"

"God! It's cold . . ."

Tallent stiffened suddenly. Looking out across the dark, heaving sea he had seen a light . . . two lights . . . three . . . Shrill above the muffled grumble of machinery sounded the notes of Willis' whistle.

"What . . .?" began Lizzie.

"Don't know. But the Fifth wouldn't whistle unless he wanted me . . ."

With no more leave-taking than that, he ran forward along the Promenade Deck, clattered up the ladders to the bridge. The Fifth, he found, was standing by the telegraphs, staring ahead through his glasses. "It's phosphorescence, I *think* . . ." admitted the junior officer. "But . . ."

Phosphorescence it must be . . . thought Tallent. You don't run into fishing fleets between the Galapagos Islands and Pitcairn. You don't see lights strung out like street lamps over a great arc of the horizon—or, if you do, it's only clumps or colonies of tiny creatures that, under the correct stimuli, are luminous. All the same . . .

"Switch on the telegraph lights," he ordered. Then, to the man at the wheel, "hard a port!"

"Hard a port, sir!"

Slowly at first, then faster, the ship's head started to swing. The clicking of the gyro repeater was at first that of a leisurely clock, quickened to what was an almost continuous rattle. To starboard now were the lights—to port, and ahead, was darkness.

"Ease the wheel. Steady." Then— "You'd better call the Old Man, Five Oh."

"But what . . .?"

"Tell him it's funny lights, that I don't like it. He's paid

to do the worrying around here!"

Tallent picked up his glasses from the box. He stared out to starboard. He made a funny little sound—half grunt, half whimper. He put his glasses down, went into the wheelhouse for the telescope. He had some trouble in focussing it. Whilst he was so engaged the Captain came out, huge and shapeless in pajamas and dressing gown. He was, thought Tallent when he heard him speak, in a vile temper.

"Well, Tallent? Where're these famous lights of yours?"

"On the starboard bow, sir, and abeam."

"Where are my glasses . . .?" There was a short silence. The Old Man snorted. "And you called *me* out for phosphorescence? Haven't you seen it before?"

The Second Mate was tempted to remind his superior of the case of the watch officer who, during the war, had reversed the usual process. He had mistaken the luminous track of a torpedo for the shining wake of a porpoise . . . But—a torpedo is deadly. These, whatever their origin, were just—lights. Even though the magnification of the telescope revealed . . .

"Take this, sir," suggested Tallent. "You'll see better. If those lights were phosporescence they'd be moving, lifting and heaving—there's quite a sea running. But they're steady—too steady. And—do you see a suggestion of . . . framework around some of them? Lamp brackets, maybe . . . Windows . . ."

The Fifth shouted and pointed. Something large and vague flapped by at mast height, briefly outlined in the glow of the foremast lantern. It croaked discordantly as it flew.

"What was that, Willis?"

"I . . . I don't know, sir."

"A frigate bird, that's what it was. I don't know what's come over this watch. Have you two been talking to the Surgeon, with his comic shadows? And the lenses of this telescope are *filthy*, Mr. Tallent. You have a junior officer on the bridge with you—let him spend some of his time keeping the instruments clean . . ."

"Tea's up, sir," reported Taylor, coming from the wheel. "Steering one eight seven."

"What was that? *One eight seven?* Get her back on to her course at once . . ."

"Steer two six two," ordered Tallent.

"Some tea, sir?" asked Willis.

"Never mind tea. Either the ship's in danger, or she isn't. If she is—and the officers of this

watch seem to think she is—this is no time for tea parties . . ."

The lights, with this fresh alteration of course, were almost ahead again. Their color, thought the Second Mate, was wrong. Phosphorescence has a greenish or a bluish pallor. These were—ruddy. Phosphorescene is *in* the water. Some of these may have been. Others, Tallent could have sworn, shone frighteningly suspended *above* the horizon.

Closer and closer drew the lights. There was something of order in their pattern, a suggestion of straight lines. The Captain, now, had started to whistle—the dreary, tuneless whistle that showed that he was worried. He rubbed the lenses of his binoculars on the sleeve of his dressing gown, raised them to his eyes again. "I think . . ." he began.

Then, as though some invisible hand had touched a switch, the lights were gone

". . . that our bow wave has disturbed them," finished the Old Man, "It often happens. These little bugs that make phosphorescence may be started off or stopped by *anything* . . ." He loosened the cord of his dressing gown, threw the garment back from his pajamas. "It's hot," he said.

Willis came out with the tea. By now it was lukewarm. So was the toast. The Captain did not seem to notice, but Tallent sipped and munched disgruntedly.

"You did right, Mr. Tallent," Jumbo admitted magnaminously. "That phosphorescence almost had *me* fooled. But do, please, try to use your own judgment a bit more. I don't know what the passengers would say if they got to hear about it . . ."

At last he went down. And the Second Mate paced the bridge, moodily smoking his pipe, and the Fifth Officer and the stand-by Quartermaster made their futile rounds of decks that were bare of both human life and—shadows.

"WHERE'S Miss Carr this morning?" asked Tallent.

The Sister paused in the act of sprinkling salt on her porridge. "She's in the hospital," she said. "We thought she'd be better off there—she's not well, and her cabin mate has been complaining of some very disturbed nights."

"What—Fat Emma? That woman looks as though she could sleep through a bombardment. But what's wrong with Carolin?"

"Nothing serious, Tubby. You needn't worry yourself. I'd say it was a sort of light fever. It it hadn't been for Fat Emma, as you call her, complaining, we

wouldn't have bothered to shift her from her own room . . ."

"Any more trade?" asked Hillyer. "You should be in a position to tell us all the latest scandal, Sister."

"Nothing — interesting. If there were, I shouldn't tell you. Just two kids, as a matter of fact. The Porter brat, and little Emily Wilson. There again—it's nothing serious. We don't know quite what the trouble is—it's not fever, their temperature is subnormal—but they're eating like young horses. They're up in the hospital too—it gives 'em a better chance of sleeping. It seems that they had very restless nights last night . . ."

Breakfast was soon over. Tallent stayed for a while on the Promenade Deck, smoking a cigarette with the Sister before he went up to the bridge for his forenoon navigation. It was a fine morning, not too hot, with just enough wind to lend a certain freshness to the day.

Lizzie leaned back against the rail—then looked forward and aft along the deck to see that there were no possible eavesdroppers.

"Those lights," she said abruptly. "What were they, Tubby?"

"Phosphorescence."

"Do you believe that? I've been to sea a long time, longer than you. I've seen phosphorescence. Milk seas, wheels—all the forms it takes. But never anything like this morning. It was the wrong color. It could have been . . . Oh, I don't know. The lights of a town or village, perhaps. There was a suggestion of streets. There was . . ."

"It was phosphorescence."

"Yet you altered course for it."

"So I altered course, Lizzie. So what?"

"I wish I knew. I haven't dared to ask Jeff about it. I know that if I did he'd tell me that it was *something*—and that something wouldn't be jellyfish shining like hundred watt lamps to attract their lady loves, or their suppers, or whatever they do it for. You didn't put the radar on, did you?"

"No. Damn it all, Lizzie—the nearest land may be only five miles away, but that's straight down. We've had the sun every day, and the Moon, and Venus—and there've been stars morning and evening. I may be *the* navigator—but the others do plenty as well. We can't all be wrong."

"Can't you?" asked the Sister. She didn't wait for a reply but threw her half-smoked cigarette into the sea, hurried down to "A" Deck for the morning surgery.

Tallent finished his smoke

more slowly, less wastefully. He got up to the bridge in time to catch Venus on the meridian, carefully crossed the latitude thus obtained with a Position Line of the sun. He was inclined, he knew, to be careless; but he would have been willing to swear on all the holy books in existence that the only errors in his morning navigation were minor, personal errors of observation. He knew, as well as he knew anything, that every position obtained since leaving Panama had been as correct as was possible—making due allowance for human frailties and the inevitable falling-short of absolute perfection in any man-made instrument. Having finished his work in the chartroom he went down to the Master Compass room, finding a certain comfort in the morning ritual of checking synchronization and cleaning trolleys.

His motor commutator was blacking up rather badly, so for half an hour or so he played quite happily with crocus paper, clean rags and carbon tetrachloride.

He wondered, then, if he could go along to the hospital to visit Carolin. He would have liked to—but Jeff and Lizzie had made it quite clear that the hospital was out of bounds to *everybody*. It wasn't a proper hospital, but a block of cabins on the after end of the Boat Deck that had been used for that purpose while the ship was trooping. When she was finally reconditioned those cabins would become, once again, passenger accommodation—meanwhile it was the private kingdom of the Surgeon and Sister, and they were very jealous of its territorial integrity.

He was restless all that day. He coudn't settle down to reading, or writing letters, or any of the standard methods for relieving the tedium of an ocean voyage. He was not sorry when he went on watch at noon, managed to fill in the portion of the watch remaining after lunch correcting charts. Both lunch and dinner, without Carolin, were unsatisfactory meals. Lizzie was monosyllabic, and Hillyer was at his most boring.

Tallent turned in early. He slept heavily. He roused himself with a great effort when he was call at Seven Bells—and for long seconds had difficulty in orienting himself. Who was he? Where was he? As he lit his cigarette he found that he was telling himself that he couldn't care less.

"It's cold," the Eight-to-Twelve quartermaster told him. "You'll need a coat, sir. No, it's not raining . . ."

The Captain was on the bridge

when Tallent went up. He looked huge from the Second Mate's viewpoint half way up the ladder, loomed large and dim and vague against the only slightly paler darkness of the overcast sky.

"Is that the Second Officer?" he asked. "I've sent the Third down to make rounds—that damned prowler's on the loose again. And those kids in the hospital have been screaming their blasted heads off . . ."

"Shall I send down for the Sister, sir?"

"She's sleeping up in the hospital, they tell me. I wish she'd keep her patients quiet. Is that you, Mr. Trent?"

"Yes, sir. I've been round, and I've looked everywhere, but I can't find anyone—or anything. Mrs. Cartwright swears that it was something like a huge ape . . ." The Old Man snorted. "She does, sir . . ."

"*I'll* go down to see Mrs. Cartwright . . ."

"And I hope to God you trample on her, Jumbo," whispered the Third to Tallent.

"Did you say anything, Mr. Trent?"

"No, sir."

"Well, you can hand over to the Second. I'll see him when I come back."

The Third handed over to Tallent. He was very bitter.

"Apes," he complained. "I ask you . . . And this ape, mind you, went through a shut door . . . She'd been drinking. I only hope that Jumbo smells her breath . . ."

Jumbo had smelt her breath.

"The woman was drunk," he told Tallent. "If there's any more trouble with her, I'll have her tap stopped." He stood for a few moments rocking on the balls of his feet, then said viciously—"It might be as well if I stopped *everybody's* tap in this ship."

The Second made no answer. He didn't want the episode of the strange phosphorescence dragged up again.

The Old Man snorted. He stamped into the chartroom. His shadow, in the patch of light thrown through the open door, was violently agitated as he wrote. He came stamping out.

"Orders inside," he grunted. "Call me for anything—serious. G'night."

"Goodnight, sir."

When his superior was gone Tallent lit his pipe. The smoke should have been warming, soothing—but it was as comforting as a lukewarm bath on an Arctic morning. It did little, nothing, to dispel the nagging unease that was part of the darkness, the unnatural cold, the sibilant, menacing whisper of the

water all along the side of the ship. Willis took the torch from the chartroom, his Indian Club, went down to make his rounds. Tallent wished that he could order him to stay on the bridge. He was frightened—but of what? He didn't know. It was, so far as he could judge, of the little things, the small sounds that are part and parcel of a ship under way at night. They were tenuous, somehow. Wrong. The whisper of water along the side was as if the ship were slipping through some medium not heavy enough, not dense enough. The very sound of the bells as they were struck by the man at the wheel was . . . ghostly, could have been a phantom carillon sounded in the almost airless wastes of a Lunar crater.

A lack of substance, that was it . . .

Matter itself thinning out towards the edge of the world, the edge of the known Universe—and the ship going over, and down, and down . . . Falling through . . .

But not through empty space, not into nothingness—that was the worst part. Into another world, perhaps, an alien dimension, peopled with . . .

Tallant s t a r t e d, almost screamed, as the cowled apparition materialized at his side. But it was only Willis, coming back to the bridge to report. His silhouette was bulky and frightening—Tallent saw that he had put on his duffle coat against the cold. The two officers smoked in silence for a while, then Willis, reluctantly, went down again.

He was back at two o'clock. The tea was up then, and the toast. Somehow the watch officers' supper smelled more tempting than usual—the hot tea, the savoury fragrance of hot butter and toasted bread. Tallent warmed his hands around his cup before raising it to his lips. He drank appreciatively. The tea was good—it was hot, and strong, and there was plenty of sugar and condensed milk.

Willis suddenly choked and spluttered, dropped his cup with a crash. He managed to gasp, "Did you hear that?"

Tallent had heard. A scream, from somewhere aft. A woman's scream. But he raised his cup to his mouth again, then reached for the plate of toast.

"Some silly, hysterical woman," he mumbled, his mouth full.

Don't look at the bogeyman. Pretend he's not there, and he'll go away . . . Don't leave this little oasis of warmth and comfort and the pleasure of familiar things, and it will always be around you . . . Don't . . .

"It was from the hospital." The Fifth's voice was tense.

Tallent finished his tea, helped himself to the last slice of toast. Then—"Give me that torch," he ordered.

The Fifth gave him the torch. He gave him the Indian Club. Still Tallent didn't hurry himself. He was unwilling to leave the bridge. He knew—*he knew*—that once away from that familiar ground he would be venturing into *terrae incognitae* more perilous than any dreamed up by the ancient cartographers.

But he had to go.

He was sweating when he got to the after end of the boat deck, the hospital cabins. He could have sworn that the ship was down by the head—it was uphill all the way. The door into the fore and aft alleyway was jammed—but at last Tallent managed to wrench it open. He was helped in this from the other side, by somebody pushing. It was the Surgeon. He was in pajamas, with a reefer jacket over the incongruously gaudy striped pattern.

Behind him was the Sister. She was in uniform still, stiff and starched, impeccably correct. She was carrying something—a bundle, it could have been, a large bundle, wrapped in a bed sheet. There was a dark stain on the sheet.

"Stand back," said Jeff quietly. "What are you doing? What have you got there?" Half unconsciously, Tallent raised his club.

"Stand back!"

There was a scalpel in the Surgeon's right hand. Some of it gleamed—the gleam of bright, keen metal. Some of it glistened redly. Tallent, hating himself, fell back. A man with a club he could have faced, or a man with a gun. But he hated and dreaded steel.

Walking slowly, carefully, Lizzie made her way to the rail. For a moment she held her burden poised over the sea—then it was gone. There was a faint splash.

Jeff sagged wearily. He drew his hand across his sweating forehead. It left a red mark.

"Who was that screaming?" demanded the Second Mate. "Was it Carolin? Miss Carr?"

"Yes."

"I want to see her."

"You can't."

"Why . . . ?"

"She's dead. She's—there!" The Surgeon pointed astern. "She's well down by this time—we weighted her . . ."

Realization flooded over Tallent. He raised his club. The naked scalpel was no longer a menace. But he was seized from behind. Strong she was, the Nursing Sister. She had been strong enough to carry a grown woman forty feet along alleyway

and deck, to lift her over the rail. She was strong enough to pinion a man's arms from behind.

"We had to do it," she whispered fiercely.

"Yes," muttered the Surgeon, looking down at his stained hands. "The children . . ."

"Damn the children," said Lizzie. "The ship . . . Fifteen years in this one ship—it's a long time. And I like her too well to let her go the same way as *Waratah* and *Anglo-Australian,* and all the others. That woman—the gateway to and from the Unknown. I watched her as she slept—saw the shadows gather, half shadow, half substance, and coming—from her . . . And that . . . Other World was closer all the time, with every hour, with every minute . . .

"Go to the bridge! Tell Captain Jenkins that we've murdered a passenger! Tell him we've saved his ship!" Then—"No," she half whispered. "*My* ship . . ."

"Yes," said Jeff. "Tell him. It'll be our word against yours—and there are two of us. She walked in her sleep, I tell you. Or it could have been suicide."

Lizzie relaxed her grip. The Surgeon raised his scalpel again, but Tallent ignored him. He let his club fall with a loud clatter to the deck, but it didn't matter. He turned, started to walk, then ran towards the bridge. It would be seconds only before the steam whistle would bellow its three long blasts—Man Overboard—before the handles of the engine room telegraphs jangled to Stand By, before the useless, lighted lifebuoy bobbed on the heaving surface of the dark sea. It would be short minutes only before the glaring lights came on, before the accident boat crept down its creaking falls and pulled away on its fruitless search.

Overhead, the thick curtain of stratus was sliding back and away from the friendly stars. Tallent knew, as he ran, that even while the clamor of alarm shattered the warm serenity of the night it would be, in spite of the tragedy it would underline, commonplace.

The gateway was shut.

THE BIG TICK

The watch warned him, unceasingly. It was driving him insane, but he had to escape that smug, certain death.

By ROSS ROCKLYNNE

"I CALLED you in from your desk, Davidge, because, frankly, I'm disappointed in your work."

Edward Cobber's smooth cold hands arranged the papers on his desk in precise squared order. He was, indeed, a precise man in all ways. His office was as perfect as the right angle could make it. Furniture avoided corners. Pictures hung straight. No item in the room was guilty of a hypotenuse. He laid his arms along the flat arms of his erect chair, looking straight into the eyes of the huddled man facing him.

Some of the perceptive keenness that had made Davidge one of the best sales managers in the agency showed in the proud lift of his graying head.

"I've waited to discuss it for a long time, sir," he said.

"There seems to be very little to discuss, Davidge," remarked the younger man, as he frowningly flipped papers. "Here's the July sales report. What do you suppose Mr. Watkins will say about the steady decline in sales? What? And July should have been a good month, a very good month.

"Then look at this pusher-letter you sent Manning. I'm terribly disappointed, Davidge, terribly. Manning's a good boy. Makes a very fine showing. But

we don't tell him that, do we? It took the fine edge off his work. Really, Davidge, after eleven years in this office. How can I ever explain this to Mr. Watkins?"

"If you'll allow me to tell you—" said Davidge.

"Yes?"

Davidge was normally a quiet, hunched man of persistent, driving energy. He said, dully, "It's my watch, sir."

He drew a thick gold timepiece from his vest pocket.

"It belonged to my father. Don't you hear it—tick, sir?"

Cobber experienced a deep revulsion when he observed that Davidge's thick-browed eyes were wide and anxiously staring. "Hear it tick? Yes—"

"It's not—loud?"

"Loud?"

Davidge smiled, a tired, haggard smile that fitted very well with the deep corrugations around his mouth.

"It's loud. Like a velvet-covered hammer beating against ice. Muted but clear. A heavy pounding, sometimes a thud like your own heart-beat amplified. And it's been going on for six weeks, sir.

"I don't know what started it, sir, where it came from. But I know it began six weeks ago—six weeks ago today. That was on June 18, the day I brought in the Spurling account. Mr. Watkins—well, Mr. Watkins congratulated me personally on the deal, if you'll remember."

A tight little swelling came and went in Cobber's brown throat. "Of course. It seemed best to let you take the credit."

Davidge nodded. "Thank you, sir. Anyway, that was the day it started. The big tick. When I got to my apartment it suddenly started. I didn't believe it at first. I laughed. And then I was going around the apartment with my head in my hands. I thought I was insane. I missed my wife more then than any time in the six years she's been gone. Oh, I came out of it after awhile. I buried the watch under some pillows. That muffled it. And I made other tests. It obeyed the laws of sound. Giving it the scientific treatment, you understand."

He laughed bitterly. "But after a week, I knew there wasn't any explaining it. Nobody else heard it. The big tick. I—I guess my work began to be affected."

Cobber could hardly bear to meet Davidge's harrowed eyes. Everything in him that demanded the clean ponderables involving perpendicular lines was incensed by the stumbling fantasy this strange person was telling. Men and words should stand erect. When they didn't, those nearby

must perform the indignity of leaning to understand.

"Perhaps," said Cobber, "You should have let the watch run down."

"I did, sir."

"Or leave it at home while you were at work."

"I did, sir." In the shadowed craters of his eyes his agony swam.

"And still you heard this so-called 'big tick'?"

Davidge's chest rose in a deep grasp at air.

"I'm sorry it's so hard for you to believe, sir. The watch was an obsession. I had to wear it. I had to keep it wound. I had to know if it was ticking big. Or if it wasn't. And I had to know if the rest of the office force heard it. I never could quite believe they didn't. I would have given anything if they had."

To have to sit here and see Davidge withering this way.

Cobber rose.

"Davidge," he said, his voice earnest, "a good deal of my life I've lived to a pattern. I haven't done badly. No bad habits, no irregularities. At least, Mr. Watkins entrusts me to handle his business. That's why I think I'm qualified to give you advice. Your private life, of course, should be none of my business—"

Davidge interrupted almost vehemently. "I don't drink, sir! I don't run around." He collapsed again, rubbing the back of his furry hand over his wet forehead. "I've never done things to excess, sir. That's why I've come to think—"

"Well?"

"You've heard, sir, of the sands of time—running out? For awhile now I've felt that the loud tick of my watch is a warning that I don't have much time—that when the ticking stops I'll stop too—"

"I see." A hard knot grew in Cobber's stomach. He felt ill. To have to stand here and see a mind decompose. At least, it told him what he had to do.

"Davidge," he said, staring straight past those anxious eyes. "Davidge—. See here, old man." Cobber sat down heavily.

"Davidge," he said slowly, "take a month off. With full pay, of course. And then, if your position is still vacant—"

The thought stood alone for Davidge to examine as he wished. Davidge seemed to crumble. Then he dragged himself erect, staring at the gold watch which he still held in his hand. He let it slip from his fingers to the rug. He walked slowly out of the room, in much the same spiritless way he had come in.

Thoughtfully Cobber picked up the watch, placing it absently

on his desk, in precise line with the onyx paper weight.

DAVIDGE died that evening on his way home. The car was just turning the corner when Davidge stumbled over the curb. It wasn't a heavy blow, but when the crowd gathered, Davidge's eyes were already glazed. Cobber heard it from his secretary the next morning. For several minutes he sat precisely erect, reviewing what Davidge told him the day before.

For Davidge, the "big tick" had ceased.

Cobber couldn't quite get Davidge off his mind. He was annoyed that he should feel guilty. He hated to think that Davidge, having been eased out of the firm, hadn't had his mind on his surroundings, and so had stumbled into the path of the car.

But that was ridiculous. What had happened was that Davidge had acquired the psychopathic notion that a watch was ticking his life away. (*As, indeed, do not all watches tick our lives away?*) To lend more weight to the fantasy of the "big tick," Davidge imagined that when the ticking stopped he in turn would stop.

In order to stop the maddening tick of his watch, Davidge had unconsciously committed suicide.

Cobber breathed more easily. He quickly decided to place the watch with Davidge's belongings, and to return it to his estate. He kept on putting this off, however. He did not know why. Nor did he know exactly why he kept the watch wound, except that his precise habits made it impossible to abide a man or machine that didn't function.

MONTHS passed. Then, one morning, Cobber came into his office and the watch was ticking big.

At first, Cobber thought men were working in the street. Then he understood. The light of the sun seemed to fluctuate in a great blanketing motion, like the leaf of a great book turning over. He opened the drawer where the watch was kept. The big tick sounded like steady blows on a muted anvil.

Instantly Cobber knew Davidge as he had never known any other man in his life.

He knew that this was the sound Davidge had so hopelessly tried to explain to him. He understood what Davidge had gone through. He knew that he, Cobber, would run the same gauntlet—if he let himself.

He, Cobber, must therefore never, after this, allow himself to believe that this monstrous swinging *tingk! tongk!* ever oc-

curred, either actually or as the result of a devil's trick played on him by subterranean conscience. He must immediately get rid of the watch.

Immediately!

Cobber walked to the window, shoved it open, held the watch over emptiness. He would drop it smashing to the street three stories below. Then a wavering weakness descended on him. He might hurt somebody.

Cobber put the watch in his pocket. It seemed to have increased in weight as a result of its peculiarity. He went into the street, intending to drop the watch into a city waste receptacle. Each time he attempted this, he imagined that somebody was watching him.

He passed in front of a moving street car, with the idea of letting the watch fall into the grooved track. A youngster on skates was watching him from the curb. He knew the youngster would run out and try to get the watch. He kept the watch clutched in his hand.

Chilled to the bone, he decided to return to the office.

As he started back across the street, he stepped quickly back toward the curb and felt his heart give a great crash against his chest. His body trembled. For a second he imagined a heavy car turning the corner. There was none. He bit his lips until tears came to his eyes. A few moments later he was safely at his desk.

The big tick was so prominent in his ears that he was unable to dictate. He dismissed his secretary. With an effort he pulled himself together. He cleared his desk, cleaned out drawers until the superficial trivia of his surroundings were neatly squared off.

Then he sat precisely erect, smoothing his hair and resting his arms laxly on the arms of his chair. He now retreated into his intellect, the place from which he could best defend himself.

Obviously, he had a guilt complex about Davidge's death. He had manufactured that uncanny *tingk! tongk!* as proof that Davidge had been telling the truth, that it was the watch which had foretold his death. That would relieve Cobber of responsibility.

Obviously, reasoned Cobber, he was imagining the whole thing.

When he left work that evening, the watch remained in his desk drawer. He would leave it there. Nothing would make him return for it. He was strong. He was not like Davidge.

But as he pressed in the clutch of his car, hot torment poured through him.

To know if the big tick was sounding. To *know!*

He returned to the office. But even before he opened the door, he heard it.

He fled.

Somewhere, soon, death lay in wait for him. Near a street corner, as it had for Davidge. In a collision. Somewhere along the precise, ordered path of his life, he would meet it.

That night he did not sleep, but lay awake in the haunting silence.

"You've heard, sir," Davidge said, "of the sands of time running out?"

Cobber's hands clutched his pillow.

In the morning, a rare silence filled the office. Cobber's heart leaped. With a gesture obscenely animal, he pulled open the drawer. The watch was there.

Slowly, the abysmal truth dawned. He sagged to a seat, wet forehead supported by the tips of his fingers. Very well. He had forgotten to wind the watch. He would leave in unwound.

For an hour he endured it. The silence. The not-knowing that had plagued Davidge before him. Then he wound the watch. The big ticking resumed after a moment, and then slid into the steady beating of a hammer crashing through his skull. And at last he understood why he could not make himself dispose of the watch. It was meant to warn him. As long as the big tick sounded, he was in mortal danger.

He must somehow stop the big tick.

Davidge had stopped it by dying. That was not the way.

And now a cool wind of triumph blew through his brain. Davidge had accepted his destiny. Cobber would make no such mistake. He had six weeks—the same time that was given Davidge. He needed only to get past the grim death factor hidden somewhere in the next six weeks' mesh of events.

The precisely patterned life of Edward Cobber now proceeded according to a scheme that confounded his associates. He frequently arrived late—or early. He was quite apt to leave the office for minutes or hours at a time. If he missed an important call at these times, he smiled with tight-lipped satisfaction. Perhaps, by default, he had stayed on this side of the line beyond which lay death.

The watch, which he carried always, ticked on.

He took several physical examinations. He was fit. Was the watch warning him of accidental death? Perhaps. Considering this, he indulged in the most unexpected reversals of decision.

With deliberately impolite excuses, for instance, he changed important luncheon dates to three o'clock cocktail-bar meetings.

He was not a drinking man, but that, too, was part of his battle against the charted future.

Walking across an intersection, it became habitual for him to reverse directions, without warning to himself and much less to Fate. On one such occasion, he had no sooner pivoted on one heel than a speeding car whizzed through the space he had occupied.

He knew he would have been killed in the collision.

But when the buzzing fright in his ears abated, his disappointment was profound and dizzying. He heard the clear *tingk! tongk!* of Davidge's watch. For the rest of the morning he was unable to do more than stare unseeingly at the sales reports and rather meager order blanks his disturbed secretary placed on his desk.

He continued to choose erratic routes home. He angered his wife by staying out late or all night. Often he arrived at work looking the worse for wear, a condition which had his staff buzzing.

Cobber, however, was satisfied. The weeks were passing. Somewhere along the way, perhaps often, he was neatly side-stepping his grim opponent. Statistically, his chances were getting better every day. Finally the six weeks would be gone—and the big tick would cease.

It was on the very last day of those six weeks, the first day of May, that Edward Cobber came to realize his blunder.

May the first. Tomorrow it would be over. He would be alive or dead. He would have remained home in a state of perfect stasis if it was not for his wife's nagging presence. But he went to the office.

He sat before his desk, in a kind of rigid blankness. If he could live through today. If he could exist past the hour of five o'clock, when Davidge had died. He made an attempt to return to his squared-off thinking. He straightened in his chair. He lay his arms along the arms of his chair. He planted his feet firmly.

Now. He would stay here the rest of the day, unmoving.

Nothing could touch him.

The interoffice communicator buzzed. There was a shearing away of the sharpened corners of his thoughts. The wind of fear droned through his brain.

"Mr. Watkins to see you, sir," said his secretary softly.

And at once Cobber realized the cyclic nature of events, the inevitable frustration of man against time.

Watkins coming to see him. Watkins, who came to see him not more than twice a year.

Today was not the last day. It was the only day. There had never been another.

The big tick of Davidge's watch seemed to heighten until its echoes pounded through the room. A nauseous lightheadedness gripped Cobber as the door opened. Almost he saw Davidge, as he had stood in that same doorway not many weeks before. It was, however, Watkins—and the cycle had made its round.

"Mr. Cobber, I dropped in because, frankly, you've given me cause to be disappointed in your work."

Cobber knew that, in the nature of things, there was nothing he could do but try to explain about the watch.

In the next fascinating issue of COSMOS SCIENCE FICTION AND FANTASY you'll read *Outside in the Sand* by Evan Hunter and *The Gentleman is an EPWA* by Carl Jacobi. These stories were omitted from this issue due to the space requirements of the wealth of other fine material. Don't miss COSMOS #2 for the best in exciting science-fiction entertainment!

STARGAZING

ARTHUR C. CLARKE needs no introduction to science-fiction readers. As Chairman of the British Interplanetary Society, he is one of the world's foremost authorities on space flight. His best-selling *The Exploration of Space* (the first book of its type ever to be selected hy tbe Book-of-the-Month Club) is a follow-up to his novels *The Sands of Mars*, *Islands in the Sky*, and his earlier non-fiction work, *Interplanetary Flight*. While looking forward to forthcoming Clarke books about space travel, we can enjoy his shorter, off-trail yarns, like *The Curse* on page 82.

POUL ANDERSON (*The Troublemakers*, page 1) has come a long way since his first published story just a few short years ago. His novel, *Vault of the Ages*, is totaling a phenomenal number of sales, and it's difficult to find an anthology today that doesn't carry one of his stories. He's single, doing graduate work in physics and philosophy at the Universtiy of Minnesota, and plans leaving for an extended European trip shortly. Next stop: the Moon, maybe?

EVAN HUNTER leads a double life, shuttling back and forth between mysteries and science fiction. Not only is he the author of such hard-hitting crime novels as *Don't Crowd Me* and *The Evil Sleep*, but he's also written a science-fiction novel, *Find the Feathered Serpent*, and appears in most science-fiction and detective mags throughout the field. He's 26 married, and has three children—the last of which were twin boys. He claims this adds up to a basketball team, and he challenges all Martian comers.

DR. ROBERT S. RICHARDSON says his 8-year-old daughter, Rae, would rather listen to him read his work to her than watch television. We don't blame her at all. Besides turning out such consistently fine articles as *Icarus Brought to Earth* on page 85, he is equally well known for his imaginative fiction work, usually performed under the pseudonym of Philip Latham. He now lives in Pasadena, where he works at Mt. Wilson and Palomar Observatories as an astronomer. *Icarus* is a result of original research done there by him.

COSMOS SCIENCE FICTION AND FANTASY MAGAZINE is an all-new publication with the emphasis on ENTERTAINMENT. Future issues will provide you with limitless enjoyment . . . you'll travel through space and time . . . be a visitor in other worlds. In the months to come, we will bring you even more fascinating stories by the top writers in the science-fiction field.

WHY ONE MORE?

When, several months ago, this publishing company decided to begin work on a new science-fiction and fantasy magazine, we thought we had all the answers. We knew how a magazine schedule should look, we knew what kind of paper we wanted to use, we knew where to buy staples and ink and letterheads and linotypers. We felt pretty confident and not a little cocky. Several months ago, the whole operation looked like a breeze.

It hasn't been a breeze. Questions started piling up almost at once, and they're still piling. Fortunately, we've found the answers to most of them, including the most persistent of all:

"Why, *another* science-fiction-fantasy magazine?"

These days, science-fiction and fantasy magazines seem to be springing out of the ground like Cadmus' soldiers. There are over 20 such magazines now on the stands (and by the time this editorial appears there will undoubtedly be several more). Something like a million words a month inundate science-fiction readers today, in the forms of magazines, books, anthologies, radio and television programs, and movies. Every month words pile off the presses, more words are read over the air and from television and motion picture screens.

Why, then, add to the flood?

First, because we've felt for some time that there has been too much emphasis on gadgetry rather than story in science fiction. Unlike any other form of literature, science fiction has veered off, time and again, from the purposes of entertainment to the much more limited, and less productive, purpose of showing off gadgetry, bizarre and unbelievable life-forms, or technical tricks. *Cosmos* will provide entertainment—not necessarily space-opera, or any other single form of science fiction or fantasy, but *stories* rather than lists of equations and unpronounceable names.

Second, in our research before beginning work on *Cosmos* we discovered that the greatly expanded market for science fiction and fantasy has had an effect precisely contrary to that normally supposed. Instead of there being a dearth of material, there is a tremendous wealth of it. Now that writers have so large a market, their production, in accordance with the law of supply and demand, has gone up greatly. New writers, too, have been attracted by the field and are turning out their best work. The final lineup of stories for this issue left us several thousand words overweight (and you'll be getting those words in future issues). This issue represents a winnowing of the very best from something like six hundred thousand words of copy.

In other words, there are top-drawer stories waiting to be printed; and *Cosmos* will be printing them.

Cosmos was born. Naturally, we hope it continues for a long time. And we hope you'll keep it shining.

—*The Editors*